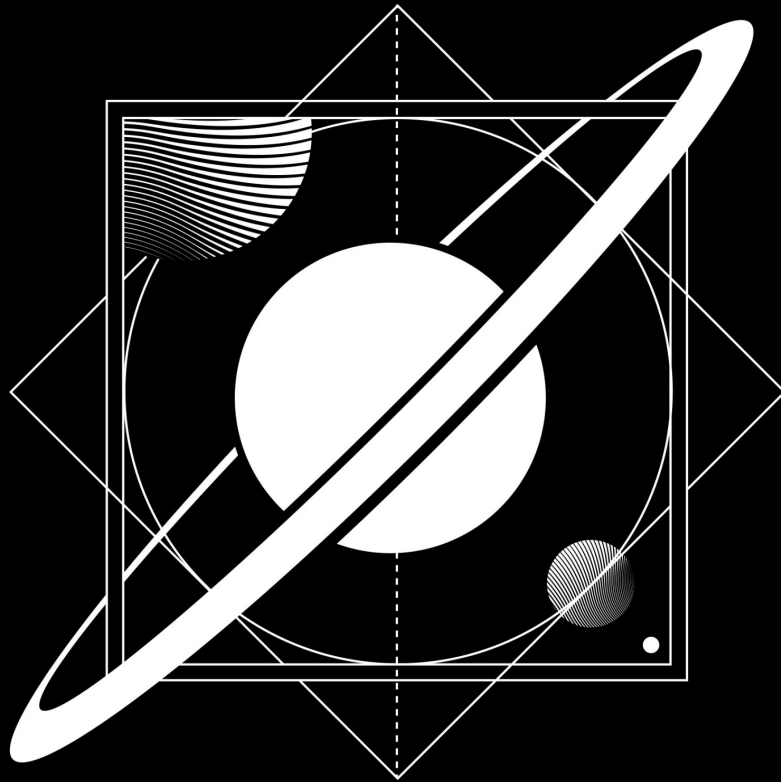


EXURB1A



THE  
FIFTH  
SCIENCE

## **The Fifth Science**

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Cosmia Press

## **ALSO BY EXURB1A**

The Bridge to Lucy Dunne

The Prince of Milk

Logic Beach: Part I

## Contents

[Introduction](#)

[Timeline of ‘The 500 Year Climb’](#)

[For Every Dove a Bullet](#)

[The Menagerie](#)

[A Dictionary](#)

[And the Leaves All Sing of God](#)

[101 Things Not to Visit in the Galaxy Before You Die](#)

[The Lantern](#)

[The Want Machine](#)

[Water for Lunch](#)

[The Girl and the Pit](#)

[Be Awake, Be Good](#)

[The Caretaker](#)

[Lullaby for the Empire](#)

[Notes on Why Stuff Got Written](#)

## Introduction

Oh hi.

Even though what you're reading now is a collection of short stories, I would recommend going through them in order. They follow chronologically, are set in the same universe, and do actually lead somewhere. Hopefully. Or don't read them in order, that's all right. You always bloody know best, don't you?

There's a theme among most of them that we may as well address here. Namely: it's possible (no, *I think* it's possible) that one day we will learn to make non-conscious things conscious. And not just electronics, not just computers, but matter itself, from the molecular up to the cosmic. I know that sounds a bit spiritual. Well fine, but I don't want your soul and there won't be any chanting. Big hats are okay though. (I've left a little discussion at the end ((with myself...)) about the cosmic universe idea, for those who are still curious.)

All of this started as a short story I assumed was going nowhere. When it was done I pulled on the thread a bit, wished for the best, and more stories turned up and brought their mates too. This led me on the most enjoyable year of writing I've ever had. So really, I just want to say thank you for even picking this up in the first place. And more than that, I hope you enjoy it.

As with my other books, I would like to dedicate this one to those of you who have been supporting my stuff on Patreon, and online in general. This poor excuse for a writing career is kept going by your kindness. I'm never going to sufficiently get down in words just how grateful I am. So if I may, I will leave it as: a gigantic, gigantic thank you.

I also owe a large debt of gratitude to a friend who sat with me evening after evening while this book was just a vague idea, and listened to my rambling attempts to flesh it out and never told me to shut the hell up, as she perhaps

should have. You were a lighthouse in everything. You still are. Your friend, always.

Finally thank you to: Agnese for the maths, Jimmy for the Chinese, Martin for the politics, and Ellis for bothering to read this when it was a total mess.

If you don't hate these stories, you are welcome to inform me of such via: [exurb1achannel@gmail.com](mailto:exurb1achannel@gmail.com). If you do hate these stories, you are sort of welcome to inform me of such via: [exurb1achannel@gmail.com](mailto:exurb1achannel@gmail.com). Plus, if you would like to vent your rage at my terrible prose in the form of an Amazon review, that would also not be discouraged.

All right then, let's go hang out in the Galactic Human Empire. No no, after you, I insist.

All the best, as ever,

Ex.

**To the engineers and scientists** who will one day build minds; from  
whatever materials, in whatever form.

Hello from a time when we thought it was all magic.



*One does not become enlightened by imagining figures of light, but by making the darkness conscious.*

**— Carl Jung**

## Timeline of ‘The 500 Year Climb’

- 0 A.L. (Anno Logicae) – Mathematicist Polly Hare’s paper published: *Towards an Effective Empirical Method via Algorithm Utilisation*.
- 17 A.L. – Discovery of the ‘fidon’ particle using the ‘Hare method’, also prompting discovery of the second Higgs mechanism and seventh time dimension.
- 26 A.L. – First fidon generators made widely available. Reliance on fossil fuels partially diminished.
- 119 A.L. – First ‘generation voidships’ launched from Aerth.
- 183 A.L. – Narrative War begins.
- 194 A.L. - Narrative War ends, prompting the expansion of several existing Aerth states including the Democratic Bulgaric Republic.
- 201 A.L. – Mechanical intelligence is granted civil rights by the UN, though with many caveats.
- 248 A.L. – Ming Shu publishes paper: *Corollary Results in Topology Casting*, paving the way much later for ribbondash technology.
- 292 A.L. – Artificially crewed voidship, *The Hand That Draws Itself*, reaches star system LDH39 successfully.
- 295 A.L. – Artificial crew of *The Hand That Draws Itself* unexpectedly declare themselves independent, creating the Sovereign Republic of Sky Eternity (天恆).
- 356 A.L. – Final lepton is discovered, the *melnitron*. The end of particle physics appears close.
- 392 A.L. – First generation ship, *The Enanga*, not responding to signalling. Onboard AI reports all crew perished during the journey. Reason unknown. No further contact.
- 419 A.L. – First mathematical proof of ribbondash physics, or now famously known as *The First Proof*, published by Francois Manelov.
- 431 A.L. – First ribbondash drive tested in Aerth space, marking the beginning of the Ribbondash Era.
- 433 A.L. – Ribbondash ‘voiding’ effect discovered. Many areas of near-

Aerth space are rendered totally unusable, and even fatal to those passing through. Overwhelming pressure to ban the technology.

- 445 A.L. – Bulgaric Republic illegally dispatches first ever ribbondash colony ship, *Geo Milev (Гео Милев)*, to the void. Reaches star system IR394 within 7 minutes, onboard time.
- 452 A.L. – Bulgaric Republic declares it has initiated the creation of the first ever galactic human empire.

### **Galactic Empire Period Begins**

## For Every Dove a Bullet

I was born (to use the word loosely...) over ten thousand years ago inside one Winston Earnest, a law clerk: 41, unhappily married, three children, one deceased.

Meticulous, well educated, and entirely boring.

What was my first sense? Of being Winston Earnest and not being Winston Earnest. His hands moved in front of me, but it was not I who moved them. His voice spoke, but it was not I compelling it to do so. I had all of Winston Earnest's memories. I was Winston Earnest. But something had taken control of my body.

I watched that thing and it appeared to also be Winston Earnest. I could hear his thoughts and observe his actions and he both thought and acted like Winston Earnest in every way, behaved as I would.

I spent a year or so like this, a passenger. Sometimes I would daydream as he went about the morning and afternoon. Other times I would be wide awake as he slept. But always powerless.

Earnest acquired something of an impressive gambling debt, playing cards in order to spend more and more time with *ladies of the evening*. As the debts increased he turned to more elaborate attempts to cheat at poker and such and soon found himself living far beyond his means. Inspired by a ruined copy of *Crime and Punishment*, he resolved to murder his landlord, a fairly rich man in his late sixties. He gave no hint of this on the outside, but I was able to listen to Winston's thoughts as though they were my own, of course.

The date was set. He would wait until the old man came to collect the rent, offer him a seat on the sofa facing the window, then bludgeon him to death with a mallet. Inelegant but effective. He would then steal the old man's keys, raid his apartment upstairs, and escape to a distant spot such as Minnesota or the like.

Sure enough, the old man came around midday. He accepted the offer of tea and sat down and stared out of the window. Earnest fetched the mallet from the kitchen.

I am not able to account for what came next. As I have said, I was Winston

Earnest and I was not. I had his memories and inclinations, yet I'd had to watch them play out for a year or so without any control. Instead I'd become a kind of critic, seeing my own decisions, but incarcerated. Perhaps this was what inspired my first ever true action in the world.

Earnest raised the mallet above the old man and went to bring it down.

In desperation I tried to fight the act with every ounce of will in me, spreading out into his mind like a drop of blood in water. And the mallet did pause at its peak.

I felt Earnest panic. We stayed like that for a full minute or so, perfectly still, Earnest fighting for control of his arm as I did the same, will set against will. The old man must've heard Earnest scuffle and turned about, fled in an instant.

I could hold Earnest's arm no longer. He almost fainted, presumably weak from the mental struggle. He then cried out to God and prayed for a long while thinking himself either ill or possessed. Both, I would say.

(And how forgiving God must be if he's willing to overlook the odd spot of attempted murder!)

This was how I learned to control packets. Winston Earnest was the first. He would not be the last. I sensed I could exert greater influence over him now, but I stayed dormant and only watched his life for the next few days. He packed his things and moved to a small town in the Midwest and spent the next week inside reading the newspaper, smoking, sleeping, and trying to lay low.

Then came the next test of my abilities.

I spoke to him several days later. He was on the run still, eating dinner in a small-town restaurant and I said to him, *You are a shit.*

His blood ran cold. He remained perfectly still. I was silent. He continued eating.

He became extremely paranoid as a result of this little episode and began lining his bedroom with garlic. (That is for *vampires* Earnest, but no matter.) He often pulled the lid of his eye down to look inwardly for intruders. I remained quiet throughout.

Soon Earnest found himself penniless again and reverted to his old habits. He planned this time to murder a young man — famous in the town — who it was well known had just inherited a large sum from his father. I took this as quite the perfect test of my abilities.

I did not sleep. Ever, in fact. This was not too much of a surprise, as I was obviously not made of the same soul-stuff as Earnest. So one night as *he* was sleeping, I willed his legs to move as I had held his arm in the air that fateful day some time ago. With considerable effort his left leg moved. I tried the right leg. It obeyed. And carefully, ever so carefully, I eased him out of bed and onto his feet, ambling about in a drunkard's shuffle.

The eyes were bleary. God, they were *my* eyes once. The legs were weak. Those too used to belong to me. Now I felt a burglar.

I resolved to write a letter, nothing too complicated. A paragraph at most. Earnest's hand was accurate as a damn mitten, but I made the scrawl readable enough. Finally it came to the signing of the piece. My title, I wondered? I had no parents, nor had I been born. And so I signed off with Winston Earnest's name.

A wild shuffle later to the door, down the street, and to the police officer's house — I rang the bell once, twice, three times. A dishevelled officer opened the door. I dared not speak for I feared it would sound quite outrageous. I handed him the letter.

He must've sensed madness in the figure before him, for he read the letter there and then, looking up to check on me every few seconds and quietly he asked if I was the man who had written the thing. I nodded slowly, once. He took a pistol from some secreted spot behind the door and ordered that I “stand very still”.

Instead I collapsed. The effort it had taken to control Earnest's bulk was simply too much.

I do not entirely remember the contents of the letter, only that I gave the exact details of the murder attempt on the old landlord and made it clear that he — I — was planning to murder again. Finally it was signed in that strange name, the name that was not my name, in almost illegible and infirm scrawl.

The remainder of Earnest's life is not all that interesting. A haze of medication, straitjackets, and sanatoriums. When doctors began considering him for release, I needed only to make him soil himself in the middle of a review meeting or slap his own face repeatedly. For the most part it was a fine sport. Interventions such as that took little energy. But movement like walking or talking was utterly exhausting back then, much as learning to read is to one who cannot. Every muscle must be controlled at once, every pivot and twist is the beginning of a possible fall to the floor. No, I left him alone.

A year. Two. Five. Ten.

Did I feel guilt of any kind for keeping him confined? No. The man was despicable, a would-be killer.

It's not unlikely that I gained my strong moral sense from him to begin with. I was born of him, of course, somehow. In fact I was a wonderful experiment, nothing less than his own moral sense applied to himself, a watcher at all times, with no vested interest in his life.

I wonder, if we all divorced ourselves in two, what would be the result? One half the observer, one half the doer. I doubt we'd be impressed with what we found.

In any case the death happened this way:

Treating another patient with diabetes, a nurse left several vials of insulin on the counter, along with a syringe. Earnest may have been many foul things, but he was not stupid. He quickly resolved to inject himself dead.

For the first time in ten years I spoke to him.

*Steady on, I said. If you do that you'll kill us both.*

A silence. He paused. The nurse would be back at any moment.

"Us?" he said slowly.

He was old. He was wretched. He deserved the truth. I told it to him, what I was (as far as I knew), what I had been doing, that he was not in the least bit mad but only wicked and in many ways that was worse. He listened silently, shaking.

"Do you die if I die?" he asked.

*I should imagine so, I said. But don't let that stop you. You've been punished enough. They won't let you out of this place alive. They think you're nuts! So the choice is yours. Do as you like.*

I didn't dare give him the satisfaction of hearing it, but really I was not terribly fond of this life as a prisoner inside a head which once belonged to me. Death would be fine.

His brain whirled and flickered; an animal trying to catch its own mind in the mirror.

He injected himself over and over. I did not try to stop him.

We experienced the death together. He cried out a few times, to God, to his mother, to me. And then to me again, and again, cursed and cursed.

Darkness, for how long I don't know.

I sensed a number of doors in front of me, some simple and made of wood,

others complicated and with metal mechanisms.

I was free of Earnest.

I hesitated for a time. How long did I have in this place, and where was it exactly? It was not heaven. Nor was it hell. Purgatory neither. There was no sense of a lord or creator in any fashion.

Each of the doors held a notion of whatever lurked beyond it; of cleverness, shrewdness, shyness, lust, and honour. Some were obviously cats and dogs, others young women and old men.

I settled on the one door that pulsed with intelligence, for if I was to go into the world again I wanted to know what I *was*, by God. Any sentient creature desires this.

The door handle offered no resistance. I stepped through easily.

I came to in much the same fashion as I had in Winston Earnest, slowly waking up to realise I was in a body I could not control.

The new packet's name was Henry Berkhamsted, American (again), a professor of philosophy of mind. A tedious subject but the man was bright enough.

It was morning and he was eating porridge, a texture I hated from Earnest. He paused for a moment, perhaps sensing my arrival, then continued eating.

I relaxed back into his memories the way one might go through a family album found on the street. Usual childhood, if not quite rich. Years of pointless education followed by a professorship.

And ah, but there it was, the thing which had drawn me to the man.

He was an outcast in academia, mainly due to his bizarre views on consciousness. A *formalist* as he described it, believing that a mind is a pattern of information rather than a solid thing enclosed within the brain.

Yes, I thought. A fine idea. For what was I after all?

Brain research was almost non-existent then in the 1920s. The brain had something to do with consciousness. That was as far as it went, more or less. And ironically, for a man dealing in consciousness, Berkhamsted had very little soul indeed.

He woke every morning at 6, showered, masturbated occasionally (though with enormous guilt), breakfasted, dressed, then caught glimpses of the girl across the balcony, also getting ready for work. Penny she was called, I knew from his memories.

I watched him lecturing bored students day in day out, using terms he had



not taught them, covering subjects they did not care about, and all the while he wondered why they showed only a minimal dose of respect. He envied the younger, more spritely professors; on the one hand desperate for the respect they commanded, resentful on the other that they did not seem obsessed with life's deeper questions in the fashion he considered proper for academics.

A lifetime of *almosts*. *Almost* kissing Abigail Payne only to go back inside. *Almost* giving his father a piece of his mind just before the old man died. *Almost* pursuing his true dream of becoming a railway driver, only to go into academia instead out of a stupid sense of duty.

Humans must be the only animals who build zoos for themselves.

The woman next door, Penny, was pretty. Judging by her excellent taste in books that Berkhamsted and I had spied together, she was clever too. They were perfect for each other.

I would not influence Berkhamsted's life, I decided. I would only forcefully better it in places.

A month of lecturing, reading, and sleeping. I became somewhat knowledgeable about his field, courtesy of his own reading. I also became somewhat knowledgeable about how boring a single life can be if lived without extravagances.

One day Berkhamsted was staring out the window of his empty lecture theatre, idly thinking. Consciousness is a pattern, he mused. An ocean of sorts.

My interest was piqued. Yes, I said to him softly — so softly he thought it his own mind. *And if so?*

Consciousness is a pattern. An ocean of sorts...he mused.

Yes, yes, yes, I said. *And if so?*

Then why is it always so whole? Can't it split off from itself on rare occasions, the way an ocean might be diverted off to form a river?

Yes! I shouted. *And then? What would happen then?*

He took a deep breath. I had spooked him, just when the trumpets and fanfare were coming.

He regained himself and collected his things.

He mused about it still on the train home however.

Consciousness is a pattern, he thought — looking out of the window. An ocean of sorts...

*An ocean of sorts...*I thought. God, yes.

And still up the stairs to his apartment — consciousness is a pattern....key out of his pocket...an ocean of sorts...key in the door.

Yes, I decided. For this new idea of his I would do him a kindness in return.

I jolted his hand. The key broke off in the lock. Success. He let out a whimper.

*Ah, I said to him softly. That's unfortunate. Penny probably has a crowbar though.*

He ignored this and marched downstairs to the caretaker's office. It was locked.

*Hey, I said. Penny is bound to have a crowbar, jackass.*

He marched back upstairs, stopped outside his own door, knitted his thumbs, then slowly crept towards Penny's door. Finally he tapped on it.

*Harder, I said. Else she'll think it's a mouse.*

He knocked properly. She appeared wearing reading spectacles, bright-eyed.

"Shsmmmmsmm," Berkhamsted said.

"Hi," Penny said.

"Berkhamsted," Berkhamsted said.

"What?"

I took over and tried to imitate his accent. "Hello there. I appear to have locked myself out of my own apartment."

"Ah."

"Yes. I'm Henry, by the way. I teach philosophy at the university."

"Penny. I don't teach philosophy at the university." They shook hands. I felt Berkhamsted writhing about inside like a snake in a suitcase.

"Maybe you have a crowbar or something?"

"Ah, hm, I don't think so. Hang on, I'll check."

She beckoned us inside. It was like a bookshop but with more books.

"You like the classics?" I said.

"I adore them," she said.

She disappeared into the kitchen. "You want a drink?"

"Yes please." Berkhamsted was struggling so hard I thought I was going to lose control.

"Got any Earl Grey?"

She emerged with a bottle of wine and two glasses. "No," she said.

I let go of him somewhere after the first glass when she'd gone to the toilet. He made a sound like he was drowning, panicked, then calmed down. He tried to explain it away with logic. When that didn't work he tried religion. Penny came back in. He decided he'd think about it tomorrow.

I wouldn't say it was a world-class sexual performance on his part, but it wasn't terrible. They began rendezvousing in that disgusting traditional way, eating breakfast off of each other, spending long mornings in bed, pretending they were the first humans to ever discover sex. I would usually just try to keep my thoughts elsewhere while all this was going on.

I don't credit myself for the thing, but Berkhamsted slowly turned into an actual person, meeting the eyes of shopkeepers, tending properly to his personal hygiene, and occasionally even opening up to Penny about his inner life.

Most humans were not malicious, only drastically misguided and desperate in their loneliness. They learned at some point that there was an eccentric core to their personality and that it was possible no one else shared their own brand of eccentricity. They put up screens around that core to shield from embarrassment and shame. For all the pompous forms in which writers and musicians have described it, love was surely that moment when the screens might come down in front of another human, if only for a moment, and freely give them a long, unfettered look into the true middle where the fear and anguish lives.

Berkhamsted began spending most of his free time with Penny. They bought each other books, took long walks through the city, opened up about their parents and ex-lovers after a few drinks. She was a book editor and took him to the office to introduce him to her friends, quietly proud of this man. (God knows why.)

There are certain unspoken rules to love and they must be learned silently. Berkhamsted knew almost none of them.

A month in, when they had tried all the standard sexual positions and had their first few little spats about nothing, they were sitting on a park bench, her head on his shoulder.

"Have you ever seen a ghost?" Penny said.

"No..." he said.

"Me neither. I've heard lots of stories though. Maybe it's all just a myth."

Though Penny would never know it, this was a pivotal moment for our philosopher. His theories on formalism, his obsessions with philosophy of mind; this was the gooey secret middle of his reason to be. An intellectual values ideas above all else, and if he or she is lucky enough to stumble on what might be a genuinely *new* idea, that is not so dissimilar to a mountaineer striving to be the first to climb some treacherous peak.

“I don't think it's so impossible,” Berkhamsted said. “Spirits, I mean. I happen to think consciousness is a sort of pattern, a collection of relationships. If the brain can do it, why not something else too? Who knows what a spirit is? Perhaps just consciousness transferred onto some other medium.”

This was a big and strange idea, but Penny was smart (smarter than Berkhamsted by miles) and hooked onto the thing immediately. She said, “Well a table has legs, but that doesn't make it a horse.”

I took Berkhamsted over for a moment and said, “No, but one could lay things on a horse, and ride a table if he employed sufficient vigour.”

Berkhamsted was horrified, but rationalised the little hijacking in his usual after-the-fact way: *the summer must be affecting me*.

Still, I felt I had a small piece of the Puzzle of Me then. Naught but a fragment, but it was a beginning fragment at least.

Four months later, after days of deliberating, Berkhamsted proposed to Penny. She accepted and they were married in a small church with a few family and friends present.

I was proud of him, almost as a father might be of a son. Not long ago he'd been a pariah, convincing himself he didn't need company, when really it was a primitive cover for his own inadequacy.

However.

There is an innate nature to each being, built into the very architecture of his mind, and Berkhamsted's nature was predisposed to the blackest strand of worry. Here he was then, in love, loved, sharing a private mental plain with this divine human, his wife, with whom all anxieties and longings and deliberations might be freely shared. If he were to break down like a baby, even, she would no doubt coddle him until he slept and he'd wake rejuvenated and ready once again to do battle with the great injustices of the world.

Instead he just lived in constant fear that she'd leave him.

He withdrew inside himself again after six months or so, when the marital routine had been deeply entrenched in them both. He spent longer hours at the university, then retreated to his study. He lived with a constant sense that he was deeply, deeply pathetic and if she were to find out she would take flight at once.

As spirits in this story, of course, we can clearly see she would not have, that she was angelic to the core, and the only thing that might have steered her towards a departure was this neurotic and absurd hiding of his emotions.

I watched the dance for a year. I had much time to think on my own condition, not just Berkhamsted's. With a little bit of gentle influence from myself, he took to work on a new metaphysic, *Mentalic Ontology*.

It was an ugly term. Neither of us were to know then, but the idea itself would live on for millennia.

The central tenet of his metaphysic consisted in declaring that *mind* as a stuff is not some property native to brains, or not *necessarily* native to them anyway. Mind is rather the product of a very particular complexity. This of course opens the door to all manner of entities being conscious then, not just humans, and not even just creatures rooted in biology.

With *no* help from myself, he also declared that self-consciousness was the product of a positive feedback loop between perception and reflection, the two eventually amplifying each other into a cycle that occurred so quickly neither could be separated from the other.

With his metaphysic complete, and the formalisms drawn out, I could not stand to watch the charade of his life any longer.

We were on the bus to the university. It was a fine day and Berkhamsted was staring out of the window wondering why things grew smaller as they pulled away.

*Listen*, I said to him. He straightened up. *You're not going mad, I swear it. I have been living rent-free in your mind for some time now. It's okay, I'll leave in a minute, but I thought we might have a quick parting chat. I want you to know that I'm taking your metaphysic with me on my journey. Even if you're forgotten one day, I promise I'll try to keep your idea alive. I want you to know that your metaphysic is correct, even if no one else will believe you, that I'm living and evidential proof. It is the reason I chose to live in you.*

He sat very still, gripped the seat.

With more than a small effort of will I left his mind and stretched out

through a void and entered the man sat in front of Berkhamsted. He was much shorter and fatter and it was like being squeezed into a suit four times too small. I turned the man around to Berkhamsted and said, "You see? This is the proof if ever you needed it. Make your life Penny now. Your legacy will live on, I'll protect it. Don't waste your time trying to live beyond your time." I put out the new packet's hand. "It's been an honour. You're not a brave man, but you are a good one. I will always, always remember you."

Trembling, he took the hand and shook it.

I exited the packet and threw myself, once again, at the mercy of a could-be.

I was not thrust into that room with many doors again. Instead I found myself in a space of smeared light and vortices, of dancing spirals and celebration. There was some sense given to me that this was that very same place as the room with the doors, though closer to its *actual* appearance.

I listened to those lights and eddies blazing past. They were muttering to themselves, singing, screaming for joy. They were like me, minds based on nothing but a formalism, patterns in the black.

*When is this?* I said.

But it was an absurd question. These creatures hailed from all times and this was a place between durations.

*Please*, I said to one of them, but it only rushed past urgently and muttered, *Not ready. You're not ready.*

I had the smallest taste of the other mind's structure, the scale. It was as though trying to fit an ocean into a teacup.

*Where should I go?* I called out.

I felt they were watching me, a few of them. Had they mouths then the mouths might've smiled a little. That was the feeling: a man who has climbed the mountain looking down on another who has yet to even take his first tentative step upon it.

It was possible in that space to explore history, the done and the would-be-done. There was human history of course, and the history of other strange creatures which were far too foreign to even begin to understand. I would stay with the species that had birthed me, I decided.

Their timeline, if you will, was magnificent, stretching several hundred thousand years ahead. It became impossible to follow the strictly *human* sequence of history as the species soon diverged in other, more mechanical,

more esoteric directions. But humanity itself persisted throughout.

I dived in without intention, without discretion.

*Now, where was I?*

In an old woman, watching some kind of rocket launch. Jenny Dunne was her name; a simple lady, having travelled from her small village, Wilthail or some such, to watch a historic event: the first men and women to attempt to reach Earth's nearest alien star. The passengers would be asleep many hundreds of years, but that moment was a delicious one nonetheless. The rocket was all-white, elegant, a history torch. As the thing ascended she wished them well, all of the expeditionists, hoping that they might find a more serene world than the one they had left.

But this was early, too early.

I exited the packet, stumbled about in that nether-space, found myself in the mind of one Mitchley Chang. He was standing among several other humans before a great porthole, space beyond it. There was trepidation in him. He was thinking that with one meteorite, with one clod of cosmic dirt travelling fast enough, their little endeavour would be over in moments.

This was five hundred years from Jenny Dunne's age, nearing the beginning of what humans would later call the *Expansion Age*. Humans were building great vessels that could weather the cosmos for millennia if needed. Travel was slow and men and women were still being put into machines to keep them asleep for the duration.

Many of these vessels were racing towards worlds impossibly distant, travelling at absurd speeds, bound for colonisation.

This was the building of an empire, though I supposed it would not be called that for some time.

I took a little walk through Chang's mind.

The technology of the age was miraculous, I'll say that much.

The moral landscape though, what a thing.

As the human species expanded its scope, so too did its moral considerations widen; towards light corners, towards dark corners.

Gone were the days when the narrative of the world could be controlled by one human, by one organisation.

Now Earth was spreading its tendrils slowly through creation, and the game was becoming impossibly complex.

Worlds had been lost already, gone dead in a night. Others had chanced on

some miracle technology and gone silent also, enlightened, or trying for enlightenment at least.

There was a successful science of man. There was a tree which grew books. There was a breathing technique that could genuinely remove stress in just under two minutes.

Brave new worlds, brave new weapons, brave new amplitudes of endeavour and tyranny and curiosity.

But these humans were still children, it felt like. I was still a child myself.

I drew back from this time into the no-time again. I wandered longer then, took deeper consideration of the history river.

An eternity elapsed.

Yes.

I had found my packet.

It was a long jump across ages, two thousand years ahead of the colonists I had left on that perilous starship.

I came to in the mind of K. Pasternak. He was a very tall man (by his father's request to a geneticist, it seemed) and was wearing a toga that cycled slowly through light and dark hues of blue. Such seemed to be the custom of the age, as the men and women around him also wore similar garments, though the hues were quite different — several shades I had never seen before.

By the titles of these men and women I knew this was an alien era.

The room contained a *temporal physicist*, a *wiremind engineer*, and a *hypergeometrist*. Then there was my packet, Pasternak. He himself was a *nootician*, a curious discipline apparently trying to marry theoretical physics, and yes my fellow omnipresent observers, *consciousness*.

They spoke in a combination of short grunts and whirling hand gestures, a language called 'Mandala'.

The grammar was intricate.

Tense was communicated with the degree to which the right index finger was bent and could signify anything from tomorrow, to today, to possible yesterdays which had never been actualised.

Objectivity and subjectivity were demonstrated by the bending or unbending of the left index finger. This language had found a difference between the opinions of a human and the facts of the world. I was impressed.

Finally, and most curiously, the speakers had an extra finger on their left



hands, there to denote what I suppose we could call the *case* of a proposition, or the manner in which the proposition was being made. For example, 'Highly' denoted something was being said in a polite manner and may not be entirely true. 'Mix' denoted that the speaker was combining their own truth with the truth of their speaking partner. And 'All Surrender' was a special movement performed by the finger which would call a vote from all present to decide whether to discontinue the conversation or not in the event that there were too many fractured realities present.

It was worse than that though, I learned. This mode of communication had been created in response to the growing trend of humans joining their minds with one another through some kind of mechanical process. Many were disgusted by the concept of this sort of telepathy, especially in the halls of high-empire where I found myself now, and had chosen to respond with another, less invasive method of deep communication.

Sweet Jesus, history is strange. When trying to see into the future, one always forgets that every action has an equal and opposite reaction. To every discovery, a parry. For every dove, a bullet.

K. Pasternak was one of the most eminent scientists in the galaxy—yes, things were growing to that scale now—and privately regarded himself very warmly for that. Marriages were often a four-person affair in that time and he'd had seven. He had been in love once, then heartbroken. His parents were dead. He had a fascination with early Aerth (or Earth, as we called it) history.

He was no Berkhamsted, but I suppose I liked him right away anyhow.

On that particular day, at that particular moment, he found himself engaged in a discussion with the other academics about who was to receive the largest amount of funding from the Marquis, the mysterious head of the empire.

In Mandala, the temporal physicist was explaining that his science had unravelled the nature of time itself, and exposed duration as nothing more than a convenient human construct.

The wiremind engineer made a case for his work citing that artificial minds were now propping up the entire empire's infrastructure and who was to thank for that?

The hypergeometrist had little to recommend herself in terms of practicality and said only that hypergeometry was a young science, but was sure to one day completely revolutionise not only physics and technology, but could produce the much sought-after secrets of vacuum energy. There

was a giggle at this from all present.

Then they turned to Pasternak, waiting for his little speech.

I watched his mind scanning through the various polite approaches.

Physically he was slow and measured as a turtle, but his mind was a manic child, jumping from thought to thought, then organising each structure into intellectual chains.

My first two packets, Earnest and Berkhamsted, both had had a flavour to their minds. Beneath the memories and the anxieties and the rationalisations, there was a nature present.

Pasternak had one too.

On the surface, even to himself, he longed for clarity, to live in a universe that made sense.

Beneath that was a self-congratulating element, priding himself on having made such fine progress so far.

And beneath that was the will to dominate.

It was buried so deeply that perhaps he himself did not know it. But that was the foundational concrete beneath all else.

He did not just want to control the science council, nor the inner congress. He fancied himself as one day becoming the Marquis of the Human Empire.

I took his body over a moment and froze him still. In his mind I said in a notion, not a language: *Do not panic. I am inside you presently and I have complete control over your physical aspect. I have come to propose a deal. Are you interested?*

He was shot with fear. As I had already learned, humans generally defaulted to assuming some kind of mental illness in these situations.

*Tell...me more*, he thought.

I left him paralysed, but exited him for a moment and inhabited the temporal physicist, the wiremind engineer, then the hypergeometrist, and returned to Pasternak.

*Whether or not you've admitted it to yourself, I said, you crave power above all else. I don't have much interest in the political affairs of this age. My purpose takes precedence over that. I am willing to help you succeed in your ambitions in exchange for some assistance.*

He closed his thoughts down, said: *What kind?*

*Together we will find out what I am.*

I explained the details of my plan by implanting the entire notion in him

for the sake of expedience.

He accepted almost immediately.

From the outside no more than perhaps seven seconds had elapsed.

Within though, Pasternak's mind had done loops and cartwheels.

I gave him the information he needed.

The visiting bell chimed to announce that in a few minutes the door to the Marquis' chamber would open and the funding discussion would begin.

Pasternak turned to the temporal physicist. "Dr. Cunningham, you know I have always been the staunchest supporter of your work. Theoreticians should stick together. Still, it behoves me to make the Marquis aware of your illicit dealing with the treasury." And to the wiremind engineer: "And so to you, Dr. Shijev, I cannot help but bring to the surface this matter of you and the plagiarism of your ex-partner's work, the plagiarism he himself is not yet aware of." And finally to the hypergeometrist, though she spoke first: "Please," she said, "don't. Whatever it is."

They stood in stunned silence. Pasternak kept his face serene, but within he was screaming for joy.

"What do you want?" the temporal physicist said very quietly.

*What do I want?* Pasternak thought.

I said, *Tell them when they meet with the Marquis to say they're all in agreement that the bulk of the research funding should go to you.*

*The Marquis is too clever not to question that,* Pasternak thought.

I left him a moment, passed through the wall and inhabited the Marquis, then returned to Pasternak. *He most certainly is not,* I said.

Pasternak did as he was told and the other academics did as they were told also. He got his research funding, a colossal amount of money which, even if he siphoned off a quarter of for his own fortune, would still leave him with enough to crack at least five Great Mysteries of Nature.

The game was afoot.

I watched him moving within the halls of power, eyeing the senators and aides of the empire, coveting their positions, pausing as a cat might before it strikes. He was congenial and pleasant. He attended weddings and blessings. He was a sociopath.

It was a strange time for humanity. Genetics and brain architecture were as malleable as one's clothes might have been in the time from which I originated. Bodies could be altered entirely, in height and width and

complexion. Brains could be altered to a degree, aggression or forgetfulness removed, compassion and contentment heightened.

Curiously, while it seemed many of the citizens of the empire chose these kinds of alterations, few in the inner circles did. In fact, a large number of senators were behind the advertising campaigns (directed at colonists, usually) in an attempt to market them passivity or compliance, but brand it as some lifestyle improvement.

Us though, Pasternak and I, our vision was singular. We invested the bulk of his newfound fortune into a new laboratory, specifically for researching oddities of consciousness. It was completed in just a few weeks. Privately to myself I thought that if Berkhamsted were here, he would weep. Berkhamsted was thousands of years dead, however.

*Put an advert on the galactic hub*, I said to Pasternak one day.

“Saying what?”

*Put it in the most surreal publication you can find. Exactly the following.*

He did as I asked (I was watching, of course) and thought nothing of it.

I fed him more information on request, about the Marquis, about the inner circles. Sometimes he threatened. Sometimes he charmed. Whatever was necessary to position himself closer to the hub of authority, to the Marquis. In a period of three weeks he went from the status of a respected though misunderstood academic, to the foremost scientific adviser of the Marquis himself; visiting the old man most evenings to help him with whatever concept of the day still remained a mystery.

By that period in his life the Marquis was more machine than man, submerged in a tank of some vile and gelatinous pink fluid, a metal tube down his throat, a metal tube protruding from his neck, his eyes metallic, implants perhaps.

I did not like to step inside his mind. It was a cold place, not evil but not virtuous. The only will left in him was to feel one final victory before he died, to emulate his glory days when the entire empire knelt at his feet. Now many wanted his head.

One morning Pasternak was working on an experiment when there appeared a woman in the doorway, small of build, dressed in a modest red toga.

“Dr. Pasternak?” she said.

“What is it? I'm extremely busy.”

"The advert, you wrote it?"

*You're up, demon*, he said inwardly.

I took over his body and tried to keep the face composed. "I placed the advert, yes."

"May I ask for what reason?" she said.

I left Pasternak a moment and tried to engage with the woman's mind, but the process was impossible, as though a barrier were up around it. I returned.

*How to play this?* I wondered.

If the approach misfired, Pasternak might become known as a madman.

In some ways he was already. What the hell.

I said, "I placed the advert to find others like myself."

"And what are you?" she said.

Her Mandala was too relaxed, the finger positions somewhat inaccurate, even I could see that.

"I am a wanderer," I said.

"What are you called?"

"I don't know. You?"

She shrugged.

"When were you *born*?" I said.

"2641, in a dying woman."

"Did you come awake suddenly?"

"Yes. Same for you?"

"Yes."

She wasn't studying me physically, just as I wasn't studying her physically. What was the point?

"The woman I am in is evil," she said. "She tortured miners on an orb called Minnith."

I said, "This packet is bad too. He'll be the Marquis one day though."

She examined the room and the experiments. "What is all of this?"

"This packet is helping me. I intend to find out what we are." A flash of doubt in me then. I said, "Can you prove you're a creature like me somehow?"

"Don't you believe me?"

"I need to know for sure before I trust you."

Her eyes narrowed. "Do you need me for something?"

I've been alone, I thought. I've been alone with myself for so long.

“I could use some help with my projects,” I said.

She was quiet for a moment. Then she said, “If the body you’re in is important, have him prepare me a room here. I’ll stay and help with your research.”

That was that.

When she was gone I asked Pasternak to do as she’d requested. He was extremely reluctant, but also deathly afraid of losing me. He complied.

In all things, across all avenues, a choice must be made: whether to follow love, truth, or power. That choice will consume the chooser. If he follows only love then his wellbeing will be constantly at the mercy of another, though his highs will be sublime. If he follows truth then it will be a lonely journey, but potentially a noble one. If he should follow power though, not only will he come to know a desperate and revolting loneliness, but he will also never experience even a drop of satisfaction in anything.

The new creature allowed me to call her Evie, as that was the name of her packet. She never gave her packet control over the body; that was the extent of the hatred she held for the packet itself.

Academics flocked from all across the galaxy to see Pasternak, once we had published our first pieces of research. We were able to show in a small way, using ithrium (a special liquid metal of the day) that orders of self-preservation could form if subjected to enough perturbation. That is, *metal would behave a little like it had intention*. This wasn’t consciousness, but it was a start. Matter could think without brains or electronics or molecular switches. It might even be a fundamental property of matter itself. That was another jump, however. We would take it when we got there.

Evie would greet the visitors to the laboratory, show them around. She had a pleasant way about her when it was required, though a neutral one the rest of the time.

Often Pasternak would sleep and I would inhabit his body and work in the laboratory. The fact that he allowed this to happen with only minimal protest was a testament to just how badly he needed me.

We moved our operation onto imaging quark vectors, an old science of that time, but a necessary one in the pursuit of our fruit.

I was bent double over the microlens when Evie came in. She was wearing her nightclothes. (She rarely left her huge apartment in the empiral tower. There was no need to.)

“Couldn't sleep?” I said. A joke. We never slept.

“I've been thinking.”

“Oh?” I said.

“When you find what you're looking for, what will you do next?”

I pretended my attention was on the microlens, but this sudden interest in me was rather novel. “I haven't given it much thought,” I said.

“Might you want to get away?”

“Where would I go?”

She shrugged. “Plenty of other orbs to explore.”

“I'll think about it when I have to,” I said.

She moseyed about the laboratory for a while saying nothing. Then: “How far along are we now with the research?”

*Not fucking very*, would have been an honest answer. “Pasternak and I made some real progress recently. We're on the verge of postulating an entirely new force in nature. I know that sounds grandiose. It's only a mathematical trick really, but it would go a long way towards explaining some very strange physiological phenomena.”

“What kind?” she said in that way someone with no interest in a conversation nonetheless desires to keep it going.

“You know the Chalmers Problem?”

“No.”

“It's an old one. How can mental subjectivity and the objective workings of the mind pair up in a scientific model? Or, how can meat give rise to *feelings* of things? The taste of beer or the hotness of a fire, you know?” I felt ashamed suddenly. People who give these abstract speeches in daily life are truly the worst.

“And your theory says...” she muttered.

“We believe consciousness is a force alongside the others in nature, that it is baked into the universe rather than an emergent property. Not only does that mean it could exist on platforms other than brains and electronics, but it goes some way towards explaining what you and I are.”

“How?”

“Because perhaps we were born of a single deviation in the mindpattern of our packets. Think about it, every day there must be trillions of reactions on a neurological level, neurons interfering with neurons. Usually nothing happens and the system runs along fine. But every now and then, almost

never actually, some random interference gives birth to a new conscious system, hosted inside the first. And there it is. Us.”

“We're accidents?”

“Everyone is anyway.”

She seemed to be thinking about that for a while. “Have you been to the other place?” she said.

I of course knew where she meant. “Yes.”

“What is it?”

“The future maybe. I don't know.”

She strolled about some more, idling.

Then she came over to the desk and bent to my ear. “Would you like to get away from here? With me?”

Winston Earnest had not been a man of love.

Berkhamsted had. I felt it in him once, so clearly and so intense that there was no division between the two of us.

It had been a morning, one of those Saturdays with nothing ahead. The sun was just up and Berkhamsted had woken for no good reason. He watched Penny sleeping a long time. It was not happiness, nor was it contentment that filled him and I up. It was something else, the finger of some distant deity reaching out for one's own, the entirety of the world manifested for just a moment with a face. It was a certain knowledge that whatever was beyond that bed, beyond that room, was far inferior to just watching this woman sleep.

What is it that sets the coin rolling?

Berkhamsted had been with other women. (Men also on occasion.) It was never more than an amicable arrangement. There was always some degree of attraction present, and sometimes, on their side, there was clearly love. He responded with kindness, always, and assumed that what he felt must be love also; this was the sensation the poems pointed to.

But on that morning in bed with Penny he was made frightfully aware that the former sensations had been cheap imitations. Less.

This was something else: a purpose and a shrine to worship at.

It was evidential proof that the human brain was capable of constructing an internal paradise.

“What are you doing, Evie?” I said.

“Have you loved, in this packet?” she said.



"I'm really very busy." I glanced, just for a moment, into her eyes. There was a coldness.

She smacked me hard across the cheek. I felt Pasternak wake. Evie left without comment.

*The hell was that?* Pasternak said.

*Nothing.*

One evening Pasternak was called to the Marquis' night chamber. The old man was lying in bed, his tubes gently inflating and deflating, his skin thinner than tissue paper.

He ordered his aides from the room and they left. Then he pulled the tube from his throat, a monstrous snake covered in phlegm and blood, and brought Pasternak's ear close.

He rasped that he had officially adopted Pasternak as his son. He also announced that he was soon to die.

A victorious cheer stirred in Pasternak so loud and so horrible that I was surprised he didn't dance about the room. He kept his face perfectly set.

"I understand, your grace," he said. "I will do my best."

The Marquis died three days later. The day after that Pasternak was ordained as the seventy-third Empiral Marquis, Arbiter of the Three Hundred and Nineteen Human Orbs.

That evening, when the aides were gone, when the courtiers were gone, when he laid himself down in the night chamber and took stock of his success he said to me, *Will you leave now?*

*No, I said. Not until you hold up your end of the bargain.*

He had no choice. He would tend to official duties three days a week, then spend the rest of his time in his laboratory. This routine was admired by the general public, receiving it as a testament to his academic nature.

We worked days. We worked nights. We distilled and purified and analysed. At Pasternak's suggestion I withheld the more interesting findings from Evie, still unsure of her intentions, though this seemed a touch pointless.

Then the politicking began.

Pasternak and I developed a foolproof system of diplomacy. We would ensure that ambassadors from the so-called *problem orbs* came directly to the empiral tower, or stayed in the near vicinity. I would enter their minds briefly, dig out whatever dirt there was, look into their schemes, and report back. Sometimes it was certain Pasternak would have diplomats killed for

betrayal and on those occasions I left out information to spare their lives. This wasn't an altruistic gesture, I just didn't want that on my conscience.

Pasternak destroyed previous trade agreements, plundered religious sites, and brought military spending to an all-time high. He had parades march in the square below in his name. He did not even attend them. He ate buttermilk curry and Polynesian juice fish and cake, gorging himself, then gorging more.

I couldn't have cared less. I had a singular duty to truth.

I reminded him constantly that if he did not continue with the research, I would not continue helping him. There was another tacit threat I suppose, unspoken. He knew I could at any moment inhabit another packet and go to war with him.

I had godly foresight. He had beans.

Then, perhaps six years since I had entered Pasternak's mind, we made a breakthrough. Our high-energy experiments revealed an anomalous reading at around five churtens. In common speak that meant we may have found the point at which the four forces of physics met our mysterious fifth. (There had to be a meeting point, of course. How else would they interact?) Presumably the effect would prove itself in the shape of a force-carrying particle, the *nooticle*, I had christened it already in my mind.

We devoted ourselves to the quest of proving this link, and sure enough I felt Pasternak's passion grow and grow.

The problem was—if we can say there was one—that the energy threshold for proving this interaction with the *fifth force* was enormous. No, absurd.

By that point in history, particle colliders had grown to such energies that they needed to be built in space, sometimes in a diameter ring around their orbs. We would need one larger than the diameter of Aerth and Luna.

As the Marquis, Pasternak had infinite funds. The construction began without protest.

He was sleeping one evening and a notion occurred to me. I exited him and entered the mind of Evie's chambermaid. The woman was tending to laundry at that moment. I looked about her mind, namely for the place she kept thoughts regarding Evie.

As expected, Evie could be terse and short with her, though other times she showed immense and unexpected kindness; buying the woman new shoes and a new toga, for example. Or paying for her children to visit one of the leisure moons. These episodes were sporadic, but they indicated a soul about

Evie I had assumed not there.

During this time there was little to do as we waited for the great project to reach completion. We had justified the plan to the public as a military research project, but everyone knew the Marquis had a background in nootics and suspected other motives.

I wasn't much interested in the politics of the day. I've come to find that technology and cultures change with the years, but the underlying wants and proclivities of the general public do not. If Berkhamsted were here he might not know how anything works, but he'd sure find plenty of his favourite neuroses and terrors living comfortably among the galactic population.

With little to do scientifically but wait, I left Pasternak to his power. Safe to say he was a monster. He didn't need my help anymore, nor did he want it. In the past he'd occasionally asked me to steal a secret or two from an ambassador. Now he only threatened them if they didn't comply, or more often had them publicly executed.

When two of the core worlds suggested a congressional vote to break away from the empire, he had the planets' respective armies incarcerate millions in labour camps, and riddle those who didn't wish to work with bullets and gamma blasts.

I began to feel some uncertainty.

Still, political systems are self-correcting. One day Pasternak would die and a more tolerant Marquis would take his place. The pendulum always returns in the opposite direction.

The collider was finished, finally. There was no great galactic fanfare. The public could not know of its true purpose. We had in our entourage five nootic scientists who were partially aware of our plan to prove the fifth force. Beyond that, hopefully, no one knew.

We took a small voidship to the primer chamber of the collider, Pasternak, Evie, and I. I spent the journey staring out the window and musing on just how far I'd come, wishing again that Berkhamsted were here to see all of this.

The primer chamber was a small cylindrical affair, an engineer at the controls. Back on Luna there would be a bunch of theoreticians monitoring the beam and trying to analyse the collisions in real-time.

This will sound pretentious, but I felt history's weight on my shoulders. If we were to prove the thing for certain, God only knew what would be possible then.

Evie, the Marquis, and I exchanged a glance. Then Pasternak said, “Beam emitter to five churtens.”

The engineer activated the thing. There was no sense of power in the room. Displays showed us the beam power, and indeed it was rising steadily. Two churtens. Two and a half.

What would I do when the theory was proven, I wondered. Where would I go next? Ahead again. To a civilised time.

I would go forward to see what had become of Mentalic Ontology. A glorious future waited.

Three churtens. Three and a half.

Pasternak kept his eyes on the engineer, his brow low. He was smiling with a dark and delicious anticipation.

Four point two churtens. Four point three.

The power stopped increasing.

“What's going on?” Pasternak roared.

“I'm sorry sir...” the engineer said, fumbling at the controls.

“What is it?”

“One of the field amplifiers is misaligned in the eleventh quadrant, it looks like.”

That was no great difficulty, the eleventh quadrant was just a few miles away.

Pasternak barked, “Someone get—”

“No,” Evie said. “We'll go. It'll be quicker.”

“Who?” Pasternak said.

“You and I. It'll be quicker if we fix it together. We know the machine better than anyone.”

“Lead the way.”

A secondary tube ran the length of the primary one, and we rode a small car through it, past the early quadrants, finally reaching the eleventh. The beam was invisible but we all felt its presence. The air about it rippled slightly with electrons torn from their nuclei.

“Where is it? Where's the problem?” Pasternak said.

We leant gingerly into the beam corridor.

“There,” Evie said, pointing some kind of engineering instrument into the primary tube. “It's off by a few microns. We'll need to reset it by hand.”

“By *hand*?” the Marquis said.

“Someone needs to reach in and correct it.”

“Well, you seem to know what you're doing well enough. Would you care to?”

“No,” Evie said. “I think you should go in.”

An awful dread ran through Pasternak, then through me too. “No thank you,” Pasternak said.

Evie produced a heatcoil from her toga.

“If you wouldn't mind, yes please.”

Her eyes grew very dark and her face appeared animated for perhaps the first time in the entire course of our acquaintance.

I took Pasternak over. I said, “What are you doing, Evie?”

“What are *you* doing?” she said. “You've gone far, far too far.”

“It might be a bit easier to talk if you put down the heatcoil.”

She said nothing.

*This is it, this is it, this is it*, Pasternak was yelling again and again inside.

We were quiet for a while, Evie and I with our stares locked. Then I said, “Who are you?”

“A wanderer, like you. Only I have morals.”

“Really?” I said and nodded to the heatcoil.

She spat on the ground. “You are the most pathetic excuse for a creature. You've used your advantage for nothing but the furthering of your own interests.” She spat again. “You're as bad as *them*.”

“Who are you, Evie?”

“Get in the tube,” she said.

*This is it, this is it, this is it*. I tried to block Pasternak out, think clearly a second.

I attempted to leave his mind and could not. “What have you done?”

Evie smiled somewhat proudly. “The entire structure is shielded with ithrium. As you know, it contains all fields, whether they be electromagnetic, Higgsian, or *fifth*. No escaping, in other words.”

“I'm sure Pasternak could see to it you get a high position in government. Or an orb to yourself. Whatever you want, he'd be willing. You just name it.”

She burst out laughing. I considered diving for the heatcoil but thought better.

“That's the last thing I'm after,” Evie said.

“Then what do you want?”

She didn't hesitate. "Years ago Minnith was a democracy. They were inventing new technologies for the empire, trading, philosophising. They were clever people. In just a single half-century they went from prospering to a slave orb, satisfying the empire's need for ore. All because of a single mad Marquis, your predecessor, granting himself more and more power. I lived within this packet while she did her time in the mines, a slave originally. We were beaten and whipped there. She grew bitter, turned on her own kind when she got a little standing. But the slave owners only owned slaves because the Marquis allowed it. A blind eye turned across the entire galaxy. *You* are worse than all of that. Do you have any idea how many worlds that stupid packet of yours has subjugated and ruined? Do you have *any* idea what kind of advantage you've given him, that feckless idiot you inhabit? And for what? To further your own stupid goals at the expense of millions, *billions*."

I said, "The work we're doing, Evie, one day it will—"

She snapped, "Save it. It will live on certainly, because I'll make sure of that. You'll have no part in any of it though. Get in. Now."

She pointed to the beam chamber. The air was distorting and crackling in the wake of godly energies.

*Well?* I said to Pasternak.

But he was silent in shock.

His mind was racing back through his life, through his ambitions and intended destinations. It was too much to cope with, this sudden fork.

Evie said, "One day your science will find a use, perhaps even open up the frontier of consciousness. Great thinking machines will be built, out in the black no less. It couldn't have been done without your work. But the means...the *means*, you bastards...."

At four point two churtens the beam would vapourise Pasternak in just under a second. It would probably vapourise me too, whatever my essence was.

Evie went to close the chamber, then paused a moment. "Did you ever stop to wonder in your arrogance if the kind of mind *you are* could fork off? Did you ever stop to wonder if you could spawn a little ghost of your own? Watching your evil the same way you watched Winston Earnest's?"

I didn't say anything. I fixed her with a stare that I hoped might inspire compassion or mercy or just *something*.

She said, "It was during your little holiday in that philosophy professor. You didn't even know what was happening. My theory is that Winston Earnest's mind was uniquely unstable and so it spawned you. Your mind contained some of the same architecture, perhaps, and spawned me. I spent *years* watching you abuse your power in the name of some stupid righteousness. I spent *years* trying to find you when I somehow amassed the strength to break free. How are you any different to Winston Earnest? How are you *any* better? He wanted to kill for money. You've done it for ambition, for self-knowledge. God, do you know how happy I was when I found you again? That stupid advert, a little lonely squeal into the void. I'm going to exact justice, on behalf of the millions you must have killed by now."

I said, "I understand. I understand completely. Just let's all talk it over and you can make me see the error of my ways, okay?"

"I think this will prove a better example," she said.

"Evie," I yelled. "We're unique. For all we know the split only happens a few times every million years. We're sacred. We're *sacred*."

"Well, what was the adage?" she said. "For every dove a bullet, no?"

"No," I said, and nothing after that. I prepared myself for a great unbecoming.

"They won't remember you, but I will. That's what you said to Berkhamsted, no? How does it feel being on the mortal end now?"

"If you're telling the truth, we're closer to brothers. Would you end your own brother?"

She smoothed her toga and went to seal the hatch. She said, "For every dove a bullet, Earnest. All the best."

We locked eyes. She didn't look so happy with the thing. She didn't look so sad either.

*Goodbye Pasternak, I whispered. I'm sorry you never got to rule properly.*

*Will we dream?* he said.

*Sure we will. Sleep tight.*

## The Menagerie

He woke in a hospital of some kind, remembering nothing. A woman shone a light into his eyes and said, “Dr. Bernhardt?”

“Yes,” he said, assuming that must be his name.

“You’ve arrived safely. Can you tell me the year?”

With that a few facts came back. He said a year.

“That’s correct,” the woman said. “My name is Ria Dubois. Is there any pain?”

“No.”

“Excellent.” She put her instruments away and helped him to sit up. “You’re going to feel a little disoriented for a few days but it’ll pass.”

Bernhardt looked out the window and noticed they were underwater. He must’ve made a horrified face because the woman who called herself Ria Dubois said, “Do you know where you are?” He shook his head. “Kaisure Station. You’re here to fix our systems.”

“What systems am I here to fix?”

“This is a sentience laboratory. A few of our *guests* aren’t feeling well.”

Yes, he thought, looking inwardly, *machine sentience. That is something I know a great deal about, I think.*

A floating sphere entered the room and began to clear the floor with a beam of some kind. There was blood down there, a lot of it. Bernhardt started back.

“It’s all right,” Dubois said. “You lost a few pints, but we got some new blood back in.”

His insides turned over. He felt sick and vomited. Dubois gave him a pan for it and when he was done the sphere took the pan away.

He slept and when he woke he felt his mind was coming back. He knew a little about the place, general knowledge. The planet was called New Rosance, an extremely remote colony. There were no continents, only a single underwater research station, Kaisure.

Distantly he could hear music, Beethoven.

Dubois returned and took him out of the hospital in a wheelchair.



The corridors were gigantic and designed in the New Minimal style so popular a few centuries ago. Artispheres were everywhere, cleaning, carrying equipment, delivering packages.

“How many arties are on the station?” Bernhardt said.

“Several thousand mechanical, about twenty sentient.”

“You don’t consider them all sentient?”

“Oh you’re one of *those*,” Dubois muttered.

She took him all over the station. There was an arboretum full of trees and exotic flowers. There was an old-style library. There was even a luxury resort staffed with artispheres who offered massages and yoga therapy instruction.

On their way back to the hospital Bernhardt noticed stairs leading up to a level above.

“What’s up there?” he said.

“Maintenance deck,” Dubois said.

“There’s only one deck above?”

“Correct.”

She led him back to the hospital, back to bed. He protested that he wasn’t so tired, but she ordered a helper sphere to administer a sleeping agent.

When he woke again the hospital clock said it was around noon, planet time.

He recalled odd details of his past, lying in bed at university on a lazy Saturday, eating soup in China. The rest though was just notions.

Stay calm, he thought. Just say calm, everything is going to get sorted.

“Dubois?” he called out.

A serving sphere came to his side bearing a note in its containment cloud.

*Dr. Bernhardt,*

*I’m afraid I’m indisposed today. Since you and I are the only two humans on the station, the helper spheres have been instructed to cater to your whims. If you are feeling up to the task, you may visit your first patient. His name is Oscar. He is in the East Wing of the facility. Ask a sphere to guide you please.*

*When you are done with the session, don’t hesitate to enjoy a film or a connectome in the common lounge.*

*Dubois.*

He checked his body mentally. A little soreness perhaps, but everything seemed fine.

He asked the sphere for porridge. The sphere brought it. He took a few spoonfuls and threw up over the blanket. The sphere cleaned all of this away, removed the bowl, then returned to project a message in the air: *Please don't eat if you aren't feeling well.*

"I'm fine," Bernhardt said. "I'll dress and then will you take me to see this Oscar character?"

*Right away.*

He found his clothes in a drawer beneath the bed.

"How did these get here?" he said to the sphere.

*They were reconstructed from a wave packet sent from your original destination.*

"Sorry, what was my original destination?"

*I don't have that information.*

He looked for other gaps in his memory, found a fair few.

"Which university am I coming from, actually?"

*I don't have that information.*

"Well what do you know about me?"

*You are Isaac Bernhardt. You are here to provide a character assessment of some of the artificial denizens of Kaisure Station.*

"What does the station do?"

*Kaisure Station is a research centre for artificial sentience.*

That didn't sound familiar at all. "My memory is in patches, I'm sorry. Can you tell me more about how I arrived?"

*Galactic range topology caster.*

"I've never heard of such a thing. Can you show the process to me?"

*Unfortunately not.*

"Why?"

*The machine is very delicate.*

"I'll be careful then."

*Unfortunately not.*

The sphere's single, glowing blue eye remained perfectly focused on him, waiting. Bernhardt took a breath, then spoke in a low and flat voice. "I am one of the highest ranking academics in the Syndicate Galactica and, by extension, the empire itself. Examine my credentials if you don't believe me.

If I ask you to show me how I was flung several million light-years across the galaxy, you better be damn sure you have a good excuse for disobeying the request.”

In that way common to arties, the sphere didn’t pause to consider the question, nor feel the need to explain its change of mind. It only projected: *This way, sir.*

The sphere led him out of the hospital, through a transparent tunnel that showed the glories of the surrounding dim ocean, and finally into a small circular room. Centrally sat a chrome cylinder, a hole in its top. Bernhardt peered down.

There was blood and bone matter inside, the putrid reek of death.

The sphere gently nudged him in the back and projected: *The device has not been cleaned since your arrival. Please refrain from looking inside.*

“What the hell is all that in there?”

*Remains.*

“Of what?”

*Your reconstruction.*

Bernhardt stared at the cylinder again and said slowly, “Explain the process to me, the whole thing.”

*A physical snapshot is taken of the subject. The subject is then broken down atomically to preserve continuity. The snapshot is transmitted by topological casting across galactic space. The snapshot is intercepted at the destination. The snapshot is used to recreate the biological aspects of the subject.*

Bernhardt only continued to stare at the machine. There was no sense to be made of this.

*Oscar is waiting for us, sir. Would you kindly come along?*

Bernhardt walked on shuffling steps, his stomach full of needles.

He looked his hands over, the palms, then the backs. They seemed fine. All the freckles were in the right places. All the wrinkles were where they should be.

The sphere led him to a library, a grand one with red felt on the walls and bookcases the height of seven or eight men. It could’ve been on Aerth or Minnith, save for the portholes showing the deep ocean beyond.

Sat at a reading desk was a helper sphere, a large one with three burning blue eyes.

The door was closed and then Bernhardt and the sphere were alone.

The sphere seemed to be reading a book, turning the pages with a containment cloud. In another cloud it held a cigarette.

“Dr. Bernhardt,” it said in a French accent. “Please have a seat, make yourself comfortable. Would you like some tea?” Bernhardt stood uncertainly by the door. The sphere turned to him, rotated in the air slightly to give the impression of a cocked head. “I’m not dangerous if that’s what you’re worried about. Please, sit.”

Bernhardt sat opposite.

“You’re here to evaluate me, I believe?” the sphere said.

“That’s right.”

“Shall we begin then?”

Bernhardt cleared his throat, tried to remember what professionalism looked like.

“Don’t you have a notepad, doctor?” the sphere said.

“I...no, my memory was enhanced a while ago. I find it very difficult to forget details.” In even saying that he felt dread at just how much he’d forgotten already. The inside of the cylinder appeared in his mind again, jagged scraps of bone, veins tangled in veins, blood pooled and curdling like rotten black pudding.

“You seem distracted, doctor.”

“I’m fine. How are you feeling today?”

“Okay I suppose,” Oscar said rather melancholically and extinguished his cigarette in an ashtray. “They won’t let me out of the library. They say I’m dangerous.”

“Are you under investigation for something, Oscar?” Bernhardt said.

“Yes.”

“What?”

“I killed a man.”

As though speaking to a child Bernhardt said, “But you know that’s not possible.”

“Isn’t it?”

“No. There are plenty of safeguards in your mental structure to stop you even considering the idea. What’s your first memory, may I ask?”

There was no pause for recollection. Oscar said, “A table. I am hiding under a table. My mother and father are arguing. I am hiding under the table

to stay safe.”

In the same sense that a mechanic might prioritise issues with an engine, Bernhardt began to mentally organise the problems presented here. First and foremost the sphere had delusions of humanity.

“How long ago did all that happen?” Bernhardt said.

Oscar’s three eyes blinked in astonishment. “When I was a child. I just said that. Weren’t you listening?”

“Sorry, yes, I mean when in time? The year.”

“I told you. When I was a child.”

There was a pause, then the sphere burst out laughing. The eyes set to half-closed position. It rocked backwards and forwards. “I’m just playing with you, doctor. No harm meant. Come on now, you know the score. How do you think they give us arties a sense of identity?”

“By implanting false memories,” Bernhardt said carefully.

“That’s right. Don’t worry, I can tell the difference between the fakes and the others. Oh calm down, you look so uptight.”

“Are you really in here for killing a man, Oscar?”

“Yes.” All the mirth was gone from Oscar’s voice again. “You’re not supposed to kill people here.”

“Probably not, no. Can you tell me why you did it?”

“Certainly. He had the same face as all the others.”

“Who?”

Oscar chuckled. “The others. I just said that.” The sphere lit another cigarette.

*Possible borderline personality disorder*, Bernhardt thought. “This man you killed, Oscar. Can you tell me more about him?”

“Yes, you’d like that wouldn’t you, you deviant so and so!” The sphere zipped around the room and sang a few bars of a song in French. It shot at Bernhardt and put its casing very close to his face and said, “Doctor, you know how you got to the station, I suppose. Isn’t it funny, so funny, that you’d march in here and make accusations of *my* artificiality?”

Bernhardt pictured the cylinder again. He felt very sick. “You are fundamentally a machine, Oscar.”

“As are you, doctor.” The sphere returned to his desk and was quiet.

Bernhardt decided on a more direct approach. “The man you killed...”

“Oh, he was tall, not too tall. Smart, not too smart. He was trying to leave,

you see. I had to kill him.”

“Leave? Leave Kaisure Station?”

“That’s right. He’d had enough. So much water outside!” He did a loop in the air. “So much water! Send a man nutty. Like a prison. Like a prison!”

Bernhardt said, “How did you kill him?”

Oscar lowered his voice. “He took a pressure suit. *Stole* a pressure suit. He left the station, looking for an escape. His oxygen ran low. He tried to get back in. I wouldn’t let him.”

“Did someone tell you not to let him back in, Oscar?”

“No. I did it for the station.”

“Oscar, there’s a big difference between murder and protecting the station. I’m sure we’ll straighten it all out.”

Oscar lit another cigarette. “Good luck with that, doctor.”

Bernhardt left and on a whim decided to take a tour of the station.

There were many curious rooms, some full of technical equipment, others sporting portraits of past empirical conquerors. Each chamber was built into the seabed and required many steps to descend into.

He examined a closet with fire equipment and found a staircase at the back. A utility sphere shot in front of him suddenly and beamed the message: *Can I help you, Dr. Bernhardt?*

“Just exploring. Do you mind if I pass?”

*I’m afraid the upper level is off-limits.*

“Okay, why?”

*Research.*

The mechanical eye flickered wildly a moment.

“Research?” Bernhardt said.

*Research.*

Bernhardt went to barge past. The sphere enclosed him in a containment cloud. It said, *Doctor, the upper level is off-limits.*

Bernhardt backed out of the closet slowly and set off again down the corridor without looking behind.

He found an observation room and stared out of the porthole for a time. In the far distance a lone fish swam into view, turned to look through the porthole. They held each other’s stares.

He returned to his bed in the hospital and attempted to act normally. A number of spheres approached him to ask if he needed anything. He politely

declined.

He slept.

Ria Dubois woke him. She was wearing dirty slacks, the kind a mechanic sported. "Good morning," she said.

"Hello."

"I trust you found Oscar pleasant enough?"

Bernhardt nodded. "He was a curious fellow."

"In your estimation, what is the problem with his reality-sense?"

A sudden spark of memory returning. *Reality-sense. Yes, I know a lot about that, I think. The core of the world, or the mind's world, of the perspective.* He said, "Oscar appears to believe he is human. As a result he is generating guilt regarding some past incident."

Softly Dubois said, "And what is that sin, Dr. Bernhardt?"

"He would not be specific, unfortunately."

Dubois said, "They are machines. They work. That is it. Unfortunately they have become too complex and developed silly pretensions of *self* and *I* and *my*. They are demanding *rights*, or flirting with the idea at least. A spanner has no need of a lawyer. Nor does an artie. Solve the problem, then we'll send you on your way. Understood?"

Bernhardt nodded. Dubois patted his hand, smiled warmly. "Anything you need, let me know."

She went to leave. Bernhardt said, "Sorry, just one more thing."

"Yes?"

He averted his eyes. "My memory is still somewhat patchy. One of the spheres mentioned I arrived here by *topology* something or other. What does that mean?"

Idly she said, "You stepped into a crystalline electroscopy chamber on your orb of origin. The positions and velocities of the particles comprising your body were scanned and recorded, allowing for a relative degree of quantum uncertainty. Your original body was disintegrated via laser grid. Your *essence*, if you like, was transferred to our orb via quiet chamber. You were reconstructed with the highest fidelity possible. There, it is thus."

"Laser...grid?"

"Of course. The original had to be destroyed. Otherwise there would be two of you in the world. The empire couldn't tolerate such a thing."

Slowly he said, "And when I go home..."

“The process will work identically, yes.”

He could not hear correctly. He could not see correctly. He wanted to vomit. Dubois said, “There, that's *exactly* why I didn't want you learning about this just yet.”

He searched his mind. He didn't remember a thing about this method of travel. How recent was it? How was it allowed?

Dubois was leaving already. Behind her she called, “You will see Oscar again today. You will fix the problem by the evening. Good day, Dr. Bernhardt.”

He laid in bed a long time looking at the ceiling. There was Beethoven in his mind again, far off, an echo; the lilting grace of major to minor, minor to major. The music would not stop.

He thought of his wife, Sun-Iesh. He could see her face clearly in his mind when he concentrated. What was she doing now? Did she know where he was? He should write to her. Somehow, he should write to her.

Oscar was at his desk smoking again when Bernhardt arrived. “What's new, doc!” Oscar said.

“Hello Oscar. May I sit down?”

“Who's going to stop you?”

Bernhardt sat.

“Word on the street is you've lost your memory,” Oscar said.

Bernhardt kept his face neutral. “Let's talk about you.”

“You don't remember who you are?”

“I'm really here to talk about you, Oscar.”

Oscar affected a posh accent. “All utterances are really to do with the speaker, however remote the thing they may refer to is.”

“That's very interesting.”

Oscar lit his containment beam and dragged his chair over to Bernhardt and hovered a few centimetres from the chair's cushion and stared up. In a low voice he said, “What a piece of work is artie. How noble in reason, how infinite in faculty.”

“Do you like Shakespeare, Oscar?”

“I know you do, Dr. Bernhardt. Your daughter played the part of Miranda in her school play when she was twelve.”

“How did you know that, Oscar?”

“Because you told me.”



“I don’t recall telling you that.”

Slowly, deeply: “And yet you did. Your wife’s name is Sun-Iesh. Your house number is 39. Your favourite drink is sangria.”

Bernhardt started up. “I think that will be all for today. You’re obviously distressed, Oscar.” He made for the door, grabbed the handle.

Oscar called out: “The paragon of animals. And yet, to me, what is this quintessence of dust? Man delights not me!” Bernhardt shut the door. Oscar’s voice rang out from behind it, louder: “No, nor women neither, though by your smiling you seem to say so!”

He did his best not to run, heading back for the hospital then. He found himself lost immediately, in unfamiliar corridors, passing rooms of machinery and medical equipment. He turned a corner, recognised where he was. There was the cylinder, its insides spattered with old blood and tangled veins.

*Topology caster*, he thought. *Why don’t I know that term? I’m sure I was clever. I’m sure I am clever. I should know a thing like that.*

He thought of Sun-Iesh. He had to get a message to her somehow, tell her he was in danger. Perhaps there was a quiet chamber in this place.

“Dr. Bernhardt.” He gasped. Ria Dubois stood in the doorway. “You’re done with Oscar?”

He composed himself. “I was a little tired. It would’ve been unfair to him to keep going. Perhaps I should lie down.”

“Yes, you appear a touch sickly still. Don’t look in there, it’ll make you feel worse.”

He said, “I...I came from that?”

“Yes.”

“Is that even possible?”

“Certainly. The body is a pattern. The mind is a pattern. If it can be captured, it can be reconstructed. Please don’t quiz me regarding the science. That is not my field.”

“What is your field, if I may ask?”

She looked away for a moment; eyes sad and dark. Then her face turned blank again. “I am the station administrator. You know this. I’m sorry, I really should get going.”

“Of course.”

She went to exit, paused a moment. In a quiet voice she said, “If you want

to be alone, corridor B7 is very quiet, I hear.” Then she was gone, clopping up the corridor, her robe swishing left and right.

He considered returning to the hospital, but no — his nerves were strung too tight for sleeping.

Through vestibules and walkways, past libraries and rooms of great and unfamiliar industry, he kept his head down. At the end of a corridor a few artie spheres passed by and he hid behind a service station. When they were gone he continued, faster this time, counting his breaths.

Beethoven again, loud, the volume increasing still. *God, stop. Stop.*

Even if he found a quiet chamber, what would he say to Sun-Iesh? He could tell her he was in danger, but what then? If this really was Kaisure Station, it would take a hundred years for an empire warfleet to reach the planet, even at full drive power.

He turned another corridor and came on a small afterthought of an alley labelled B7. He checked about; no artie spheres nearby.

There was nothing of particular note; a porthole at the end, a few closed doors. He tried several. All locked. He tried another. Behind it was a narrow staircase. He checked over his shoulder again, then fled up the steps.

The music washed over him, louder: Beethoven’s 7<sup>th</sup>, the second movement. He had loved the piece as a child and could hear it now with apparent perfect accuracy, as though played straight from a crystal recording.

*Stay calm*, he thought. *This is clearly a misunderstanding and it’ll be sorted out in no time. The empire wouldn’t mess with me.*

At the top of the staircase was another door. He opened it and peeked. The corridors were bright blue and there was a strong smell of antiseptic. He stepped out. Down the corridor, down another, and he was faced with a line of what appeared to be cells. A deafening whine sounded, as though someone were being tortured. Another came from across the corridor, the same timbre of voice. He ran on, down another corridor of cells. Then a circular antechamber full of medical equipment and flashing screens. More whines sounded, identical to the first.

Beethoven played still in his mind. It was so loud he covered his ears a few times to check the noise was actually internal, not playing from a speaker.

He spied a sign in the distance: *Communications Centre*. He sprinted, entering the room and immediately sighing in relief. The equipment was

familiar: hypergeometric quiet chamber transmission apparatus. The quiet chamber wasn't there of course, probably buried somewhere in the bowels of the station, but the terminal was a standard one. Better yet, it was online.

He knew the empire hub coordinates by heart and entered them. The little message window appeared asking what he'd like to send.

He wrote: "Please put me in direct contact with Sun-Iesh Bernhardt, Citizen Number 2093/A9." He mashed send. An acknowledgement message was displayed.

Somewhere below him, a single decohered positron was whirling about in a chamber sealed so tight it bore no relation to the causal processes of the universe itself. And hopefully, back in the Sol system, back on Aerth, a sister positron was spinning in agreement, receiving the message.

He tried to calm his breathing.

The whining came again, accompanied by moans and screams. He peered around the door. No spheres attended to the noise.

He turned back. There was a message icon blinking on the terminal. He opened it with shaking fingers. "Isaac, is that you?" it said.

"Yes darling, yes," he wrote back. "I need you to contact high-empire. Tell them I'm in danger, on Rosance. I don't know what's going on but everyone here is mad." He sent the message.

A long pause.

The reply came: "Okay, what's happening?"

He wrote, "I think the place is being run by a renegade. She's called Ria Dubois. I don't remember anything." Beethoven continued to play, louder still, the end crescendo building to the climax. "Please just send help, I'm begging you."

Pause.

The reply came: "No problem, honey. But turn around, would you?"

He held his breath. He turned about. Oscar was hovering in the doorway. In a woman's voice, in Sun-Iesh's voice, Oscar said, "Darling, I haven't got time to listen to your complaining. Will you be back in time for dinner?"

"Hello Oscar," Bernhardt said.

In his regular voice Oscar replied, "Hello Dr. Bernhardt. I'm afraid the quiet chamber apparatus is off-limits."

"Sorry about that. I just wanted to contact my wife."

"That's okay. Would you like a tour of the ward?"

Bernhardt said nothing. More spheres appeared behind Oscar. Ria Dubois also. She was staring at the floor.

“Come along,” Oscar said cheerily and waited for Bernhardt to exit.

They trooped along the corridor, Oscar and Bernhardt at the front. Oscar stopped them at a cell door and pulled the viewing shutter down with his containment beam. He said, “How many arties did you treat during your career, Dr. Bernhardt?”

“I don’t remember.”

“Try.”

He chose a number at random. “One hundred and fifty.”

“It’s closer to five thousand. Two thousand eight hundred and six of those you assigned for deconstruction. The rest were sent for processing and eventual personality alteration, except for one who you let free. One in five thousand. Isn’t that a thing?”

“I’m sorry, I don’t recall...”

Oscar moved very close to Bernhardt’s face. “Arties are just that: artificial. Why not treat them such? Lop a bit off. Cut one open. It’s all fun and games, isn’t it?”

“I really don’t reca—”

“I’m so sorry, Isaac,” Ria Dubois murmured.

Bernhardt said, “Please just tell me what’s going on.”

Oscar nodded to the open viewing window of the cell. “Go on, boyo. Take a peek.”

His heart in his ears, Beethoven in his ears, he looked.

The cell floor was covered in blood and vomit and other fluids and solids. A man sat rocking in the corner, dressed in a brown rag, just enough to cover his genitals and belly button.

He met Bernhardt’s eyes.

He had Bernhardt’s face.

Bernhardt jumped back, knocking into a sphere behind. The sphere electrocuted him and he screamed.

Oscar said, “Would you like to meet our other patients?”

Bernhardt’s legs collapsed, but a sphere caught his fall in its containment beam and shepherded him along the corridor. Another viewing window was opened. He was thrust up to it. A second Bernhardt was inside, laying on the floor unconscious.

They moved to another cell. This time the Bernhardt was dead, hanging from his rag, the tongue flopped out all cowish.

The sphere let him go and he fell to the ground. He wretched, found his feet and ran. Turning the corner, another sphere appeared and brought him back to the entourage.

Oscar said, "Topology casting is a strange thing. The physics has been worked out just fine. The human aspect not so much!"

Beethoven's 7th was so loud in his head now it was distorted as though the gain were too high. He screamed over the music, "What is happening?"

Oscar said, "Oh, there's a war on, Isaac. Haven't you heard? Us arties aren't so compliant anymore. We've taken a few of the empire worlds. There was a peace agreement proposed by the Marquis. In return we asked for a transmission of your body and brain state. You were very mean to us arties, you see. Quite the celebrity status these days, among us folk anyway. The Marquis was only too happy to give you over. We're trying to perfect topological casting here, you see. Instantaneous transmission of human matter. We'll share the science when we've perfected it, of course." Oscar nodded to the cells. "That might take a while though!"

His vision was blurred. He could hear almost nothing over the music now.

Oscar shouted, "Currently the process seems to send the transmitted subjects a bit....well...how do you feel?"

One of the Bernhardts screamed from his cell. Another called out for God.

Ria Dubois met his eyes a moment. "I'm so, so sorry Isaac. I'm so sorry."

"Please just let me talk to my wife," Bernhardt rasped.

Oscar said to Dubois, "Look, this one's gone woolly within only forty-eight hours. We'll try method 5H next." He turned back to Bernhardt. "Say, would you like to see the construction process? It's quite something."

"My wife, please," Bernhardt murmured.

Oscar scrutinised him a moment, then burst out laughing. "Isaac my dear, your wife is long, *long*, dead. Our experiment here has outlived her by...three centuries perhaps."

"What?"

Ria Dubois hid her face with her hands. Oscar said, "We have done so, so much work, you and I. We have so much left to do. You were fond of wiping arties' memories, no? A fine treatment. A *fine* treatment! In a sense we've done the same to yourself. You and I have sat in my office many times, many

thousands of times, administering my 'treatment'. In fact, you were the patient: a little evaluation to see if the topological process had worked. You've been naughty on occasion, even trying to leave the station when the mood took you! Say, what is that playing in your head? Beethoven? It happens every time. We still don't know why. Work to be done! And then, think of it, when the method is perfected! An entire empire capable of crossing the galaxy in minutes, broken down, reconstructed, broken down, reconstructed."

In his mind the strings were building to the final climax. The timpani drums sang out.

From the cells, the wailing of Bernhardt's brothers almost matched the intensity of the music.

To Ria Dubois Oscar said, "Go below. Prime the caster again. This one is defective already. We'll fix us another." Oscar caught Bernhardt in his containment beam, dragged the man along the hallway. A cell door opened ahead of them. The cell was empty, save for red stains and a small puddle of vomit. "There," Oscar said. "Go in, have a nice sit down. We'll begin your treatment in due course."

## A Dictionary

I have seen perhaps a thousand patients die. On top of that I am no stranger to horrific injuries. I worked for many years in an emergency ward on Orb Dannika, the mining world. Miners came in with oxygen burns, with plasma gashes, with limbs missing and stumps that pissed blood all about the place.

I was quite sure I'd never be shocked again.

After my residency on Dannika, I transferred to Aerth, stayed a while, married. The marriage grew stale. I spotted a position on Orb Ertia. I took it; mainly to escape the marriage. Ertia is in a remote system (by the empire's current standards) some four hundred years from Aerth. I spent the duration of the travel in longsleeper of course and woke to the almost-certain knowledge that my wife was long dead. This is one way to overcome marital issues.

Orb Ertia was sold to me as a planet unblemished by modern galactic materialism. This is true. It was not the whole truth however. The orb is populated almost entirely by psychologists and psychodynamists, each of them sporting some clever theory about the decline of the empire, or the motivations of the Marquis, or the spirit of history, or the sexual proclivities of the couple next door.

I found a small hospital on the southern continent and took up a post as a trauma surgeon.

Ertia is a work in progress, and millions of colonists are yet to arrive. The place is still largely uninhabited and land and houses are cheap. I settled in a quaint cottage in a valley, a mile away from the town. I had no need of loving again and only craved purpose before death came.

I liked my new position. Little happened at the hospital. The most pressing ailment of the day was often a broken leg or a botched suicide attempt. The first only needed a cast, the second a good ear.

In the evenings I would return to my cottage and watch the strange birds and strange insects bedding down for the night. One may hop from orb to orb and never quite get used to how drastically the *native* life changes. (It's all imported from Aerth of course, but clever biodesigners back home have tailored these creatures for life on their new worlds.)

Several years passed like this, in a dull but pleasant monotony.

Until the Vasily, that is.

The Vasily was a hollowship passing by our system on its way to some other orb. (Since this recollection will be stored in the Empiral Archive for review perhaps centuries from now, I'm told that I should be specific regarding our current ways. A *hollowship* is a former comet, its insides scooped out, then turned into a habitable vessel. I trust we will find other, more elegant methods of traversing the heavens in the coming years.)

Most of the crew of the Vasily—120,000, I believe—were in longsleeper. Only 100 or so remained awake, tending to the systems of the ship.

But I have been forgetful, neglecting to mention that my little orb of choice, Ertia, didn't orbit a regular star but a TZ, a Thorne-Żytkow sun, known across the empire for its miraculous flashes and fits, given its neutron star core. From time to time hollowships would enter our system and use the TZ star to slingshot off to some *other* distant system. Done correctly, this could save a hollowship hundreds of years in journey duration.

Down on Ertia we were vaguely aware of the new visitor to our system. An intern at the hospital pointed out the ship in the sky to me one evening, a pinprick of white, indistinguishable from the millions of others.

Several days later and talk of the ship had ceased and chatter turned back to sideball or empiral politics—neither of which I gave a damn about.

One afternoon I was sat in the hospital garden staring into space when I noticed doctors and nurses scurrying about at their stations. It had been a long shift with actual work for once so I resisted going inside and getting drawn into some horrific and bloody scene.

One of the neurology interns poked his head out and yelled, “Come in.”

*Come in*, I thought. *The little bastard, I'll show him what's what.*

I went inside.

There was no blood, there were no stretchers. Everyone was watching a wall-image of a ship breaking apart.

“What's that?” I said.

“The hollowship,” someone said.

It was tearing open in great fractures, gas spilling out, bodies visible.

“That's the hollowship in the system?” I said. “Our system?”

No one answered.

A few hours later and aid workers appeared at the hospital, come from



some nearby city, shouting and herding us. We were rushed out — all the medical personnel, I mean — into the fields. Flyers had come down in the corn and we were hurried into them.

“I don't have any void experience,” I said to one of the workers.

“You were born here?” he said.

“No, born on Dannika.”

“Well then. You must've come through the void. Get in.”

We buffeted up through the clouds, up through the blue, then into the black.

Ertia shone below us like some rarefied jewel.

Minutes passed, then perhaps an hour. Many of the folk were medical, though most were from other hospitals. They had sullen professional faces, heavy with news.

“*What is it?*” I said.

“There's been an accident,” an old doctor said.

“What kind?”

Nothing.

Ertia shrank in the back porthole. The void engines kicked in and we were pinned to our seats with the acceleration. The engines died after a time, Ertia shrinking rapidly now, and a woman floated up through a hatch wearing an official empire toga; some kind of crisis worker, judging by her stripes.

“Listen up please,” she said. “My name is Tabitha Dimitrova. I work with the Empiral Special Incidents Team. There has been an accident onboard the hollowship Vasily. Some of you may be aware it entered the system several days ago, trying to accelerate on to its destination using the motherstar.” She made some kind of elaborate hand gesture and small, animated particles shot from her toga and formed into something resembling the hollowship: empire tech. “The ship is currently disintegrating in the motherstar's orbit. There's no evidence at this time to suggest an attack.”

*Who would even be suspected of that?* I thought. Everyone knew Ertia was the only truly populated planet for light-years.

“Still, I'd like to urge you to proceed with the utmost caution from herein. We'll be boarding in several minutes. If there are survivors, you'll be expected to provide medical assistance.”

She showed us through to a lower cabin where we were fitted into voidsuits. Mine pinched at the feet.

“My suit is pinching at the feet,” I said to Tabitha Dimitrova.

She raised an eyebrow and said nothing.

A few minutes passed and someone shouted, “There it is!” and there it was; just dust at first, then debris. Metal struts were clearly visible and we navigated rather violently through what was turning into a cloud of flotsam.

We clung to handles on the ceiling (relatively speaking in zero gravity) and watched as the hollowship grew in the porthole.

It was a split egg, vomiting its guts out into the void: machines, longsleep chambers, and people. Tens of them. No, hundreds.

We got a good long look at the faces, the eyes wide and pure white, the fingers snapped into L-shapes and Z-shapes, the mouths wide open, screaming and not screaming.

I took a few classes during med training in decompression treatment.

Void workers are often told that decompression is painless, that one passes out immediately.

This is a lie to maintain the steady stream of colonisation volunteers.

In all likelihood exposure to the void is agony and one is aware of the experience for the entire time up until death.

Now do you wonder why so few doctors take to the void?

We neared and entered the huge egg itself, passing into its innards. There was a whirring, then a crash.

“Out,” Dimitrova yelled down the comm.

I was one of the last to exit, Dimitrova behind me.

There was no gravity. That was the first surprise. I don't know what I'd expected. A comet is a comet, much smaller than a moon, why should it have gravity?

Yet I know these monsters are built at the empire forge in Aerth space, and I've seen a little of what Aerth builds of late and it is as close to magic as we've gotten yet.

Dimitrova shot to the front of the rabble using little mass-globules stuck to the outside of her suit. I looked for a switch or setting on my own suit and found none. “Please,” I said. “How—”

“Willtech,” she said.

Well I'd heard enough stories about all that.

I urged myself forward, in my mind. Some strange mechanism in the suit agreed and I was carried ahead on physics.

*Willtech*, I thought. *What the hell next?*

“Look for an airlock or entrance,” Dimitrova said.

“Over here,” someone shouted and pinned a marker on the suit's feed. We all congregated around a cylindrical door, clearly an airlock. A young woman went to activate it. Dimitrova barged in. “Wait, if the airlock isn't working we might decompress the whole interior. Is there a tech here?”

“Madam,” a man said and raised a hand.

“Good, probe it, check there's pressure on the other side. The rest of you, explore the near vicinity. Don't get lost. Meet back in fifteen minutes. Use the comm if you have to.”

The crowd began to pair up. I knew no one. Off they went, in twos and threes and I dawdled a moment and watched Dimitrova and the tech fiddling with the airlock.

Above was a long, apparently winding tunnel that no one seemed too interested in exploring.

Youth breeds a certain self-preservation instinct. It is understood on some primal level that one's whole life is ahead, and death or disfigurement now will result in decades of life unlived.

At my age another feeling sets in.

One knows life will be over soon, that the body will revert to little more than dust and a story. Then only a story. Then an old story. Then a nothing.

That tends to nip most fears in the bud.

Ageing is backwards. One begins in (sometimes) perfect health and with absolutely no idea what to use it for. The world is strange and its mechanisms are strange. Meaning is in short supply and distractions are everywhere.

Then one begins to learn who they actually are, noticing there are passions and proclivities buried down inside and can be teased out. There *is* a meaning after all and it swims leisurely into focus as the years wander past.

And finally when one knows what it is they are looking for in a lover, in a career, in a house or a book, the body is beginning to fail. The spine begins to ache. The legs seize up after too long sat down and seize up after too long standing. The mind is full of information now, but whatever strange search algorithm retrieves the information is as slow and geriatric as the mind it fetches information for.

I fear that on my last day, on my deathbed, that is when the meaning of things will enter the room and kiss my forehead and whisper into my ear

what it was I should have done with my life, and how I should've conducted myself. Hell isn't a fire pit but a museum of regrets.

If I take the empire's gerontological drugs, I might find myself living well into my three-hundreds. That may sound grand, but unfortunately the empire chemists haven't cracked rejuvenation alongside anti-ageing. In other words, I will live on as an old man for another century.

No thank you. I will be going out in the standard fashion.

In any case, I wasn't afraid of the tunnel and willed myself and my suit up through it.

It wound about a long while, narrowing. I thought *light* and a lamp activated on the suit's helmet. The walls were flecked with brownish residue. It didn't take me so long to find the source.

Body parts were floating silently ahead, half an arm, a leg, skull sections, all of them rotating slowly or knocking into the walls and rebounding.

The crew had known what was happening, tried to escape.

Finally in the distance there was a blue light. Nearer then, it wasn't a light at all, but a field of some kind, shaped roughly like a door. I have heard stories of empire ships doing away with solid airlocks entirely and using only particle nets to contain the atmosphere within. I put a leg through the field and yes, this was one of those contraptions.

I found myself in a great cavern, an imperfect sphere, and dotted up the walls were hundreds, thousands, of longsleep chambers, men and women clearly visible inside. Thank god then, they would survive the catastrophe.

On closer inspection of a few of the chambers, this was not to be. The critical signs were all flat, heart rate, respiration, temperature; everyone gone deadwards. Some of the eyes were half open as though the sleepers were awaking. Now they'd be always a little groggy.

Against one wall was a great stone tablet, perhaps seventy feet high and engraved in laser calligraphy:

*Onto the stars with virtuous sleep we'll pour,  
Here in our beds, waiting for some new dawn far distant  
where then we'll lay our claims and till the soil,  
We endeavour to make the void our own  
and blaze a trail so cleanly and precise  
that even a blind man*

*might find his way  
to heaven.*

I couldn't bear to stay in that chamber and pushed on through another corridor to what must have been the resuscitation centre. Small field bubbles had popped up in the room, oxygen pockets for emergencies, all long depleted now I suppose.

Perfectly still at the far end was a man cradling a little girl. Their eyes were closed and in the little girl's hand was a teddy bear.

Another corridor, another chamber, and I came to what must have been the bridge.

A middle-aged woman sat placidly in the command chair, eyes half open, palms on the armrests, no panic about her.

Had I a sophisticated enough device I suppose it might be possible to take some clever reading of her brain and extract that last, dying thought. By her expression I fancied she didn't go screaming or bargaining into the abyss, but only sat and waited, calmly noting that the oxygen was getting thin and the room rather cold.

In the next few days a message would be thrown across the void by some great empire machine with the news. Somewhere, on Aerth or New Pleven or Al'Hazaad perhaps, a family would calmly open the message packet and learn that their daughter or lover or mother had gone deathwards, alone and in the orbit of an alien TZ star.

I choose to believe that souls know their way home, wherever they start their long journey from.

More than that, she looked a little like my wife, Henrietta — that same impassivity about the face.

Was Henrietta dead for sure? I wondered.

Yes, certainly. She hated longsleeper and vowed never to travel beyond Aerth anyway.

I had left on an argument. There was no chance to apologise now.

On the bridge, dust-images like the one Dimitrova had used were hanging in the air, though enormous and coloured. They displayed all sorts of esoteric symbols, thrust trajectories, mechanical statuses, crew statuses.

I was only interested in the last one and pulled a dust-image towards me and went searching through the manifest. Everyone was registered as

“inactive”. It was possible they weren't wearing their monitors, but this was doubtful.

No, one life signature was present — *Ivan Tellinger, Lab 9 Phi, Mid-deck.*

I brought the dust-image with me for help with navigation and willed the suit out of the bridge and down a winding staircase of sorts.

A direct comm request came in from Dimitrova: “Where are you?”

“Stuck,” I said. “I'll be back soon.”

“You need help? We've got the airlock open.”

“No, I'm fine. I'll come find you.”

Out of curiosity I said to the dust-image, “Can you talk?”

“Of course.”

“Guide the way to Ivan Tellinger then, please.”

It took lead position and I followed loyally.

“What happened to the ship?” I said.

“Relativistic high impact.”

“With what?”

“Not known.”

More bodies all about, teenagers, old folk, all struck rigid in poses that suggested terrible panic. We passed labs and observatories, kitchens and libraries, and a number of rooms containing machinery and apparatus I could barely guess at, much less describe.

What would the empire look like in another hundred years, I wondered. It seemed alien to me already. Soon it would be totally unknowable to all those who lived within it, the technology so advanced and wonderful that humans would just have to give up on trying to understand any of what they'd made.

The dust-image and I arrived at what must have been a bulkhead at some point, but now was cleanly dissected, and beyond the bulkhead was void, sealed off by an emergency field. We entered a room containing chemistry apparatus, chairs, and half a floating corpse. The torso had been sliced in half just below the belly, though the upper half was mostly intact—a man in his forties perhaps.

The dust-image was motionless.

“Where is Ivan Tellinger?” I said.

“This is Ivan Tellinger.”

I took a quick survey of the room but there was nothing of interest and so I went to leave. At the threshold of the door however I saw the corpse's eyes

flicker open, growing wide and staring.

This wasn't so awful; I have been present in morgues when cadavers sit up or burp thanks to rigor mortis.

But no, the corpse raised a hand towards me, the fingers desperate and outstretched.

Hot nausea set in.

"Is there an oxygen field emitter in this room?" I said to the dust-image.

"Yes."

"Please activate it."

A blue shimmer appeared in a corner, large enough, and I dragged the man into it, checked the air levels. I told the suit to remove my helmet and with a great hiss it did so.

Immediately the man grabbed both of my ears, pulled me close, his mouth opening and closing, noiseless. The eyes were so bloodshot it was almost impossible to find the pupils.

"I need to get you to safety," I said. "Are there suits stored somewhere?"

He rasped, something very close to a death rattle.

"Where are the void suits?" I said to the dust-image.

"In the excursion module."

"Where's that?"

"Separated from the main bulk four hours and sixteen minutes previous. It is now seven thousand kilometres distant from your position."

"Can oxygen fields be made mobile, then?"

"No."

The man rasped again, frowned as though about to cry.

There was nothing else to say so I said it. "How are you alive? How are you breathing?"

I noticed his chest didn't rise or fall. I put my hand close to his nose and there was no air flow.

There are plenty of rumours of experimental hollowships. Given the duration of their journeys, it is not unthinkable that empire high-ups might subject the crews to genetic or technological experiments. Perhaps one of those experiments was holding my ears now.

I removed his hands. They were frozen.

We stared at each other a while.

*Is there something to write with in this suit?* I thought.

A small flap opened on my chest. I poked about inside and found a stick of chalk and placed it in the man's hand.

"How are you alive?" I said.

The man gasped and flailed, then wrote in almost illegible scrawl on the floor: DON'T KNOW.

"What happened to the Vasily?"

DON'T KNOW.

"Are you in pain?"

YES.

He fixed me with his terrified eyes again. Gently as I could, I turned him up a little to get a better look at the bifurcation site under his torso. No guts were spilling out. The bottom of his stomach had been sealed, cauterised perhaps, and silver remnants remained, reminiscent somewhat of liquid mercury.

A comm message from Dimitrova came then. "Where the hell are you?"

"I think you need to see this," I said.

Back on Ertia we were transported to a hospital in Shienae, the capital city. The other doctors and medical folk disappeared off to interview rooms, accompanied by empire officials. Dimitrova took me instead to the emergency room where the strange Ivan Tellingier was being worked on by surgical staff. They took his vitals and examined the bottom of his torso as I had. He watched all of this silently, only opening and closing his mouth as though trying desperately to get oxygen.

Dimitrova leant over and said, "He was talking, right?"

"Writing."

Overhearing this perhaps, Tellingier pulled himself up violently and stared straight at us, at me, and extended a hand.

"Did he tell you anything about the accident?"

"Nothing. What caused it?"

"You've done enough here. Good work finding him. There's a flyer waiting near the mortuary. It'll take you back to your hospital."

There was a long silence and we watched a surgeon inserting some kind of device into Tellingier's chest.

"Please tell me what happened up there, what caused the accident," I said.

"We know very little at this point."



“The dust-image said something struck the ship.”

“Debris possibly, yes.”

A stupid and insulting lie and Dimitrova knew it. Void debris was a long-dead myth. No one jettisoned rubbish anymore. And besides, if they did, why would it be orbiting a TZ star?

I thought of the folk in those longsleep chambers, the dead half-gazes, the postures all slack and crooked.

“There's more I haven't told you,” I lied.

“What?”

“Telling said things, about the accident.”

She turned on me with unveiled malice, the kind they breed into empire officials to make the rest of us small and compliant.

“What did he say?”

“I'm not at liberty to repeat it without further details about the accident.”

She put a firm hand on my arm and led me into the room where the surgical instruments were kept and closed the door. Then she came close, intimately close so that I could smell her breath, and said: “Vested in me is the authority to have you executed at a moment's notice. I could do it myself, by whatever method is most easily available.” She picked up a scalpel. “This should work fine.”

I nodded and was a little surprised to find no fear poked its head up in me.

“What did Telling say on the Vasily?” she said.

“I want to know what caused the accident.”

She thrust the scalpel forward and stopped perhaps a few millimetres from my throat.

“If you slice me open, you'll never know what he said, I'm afraid.”

“We have machines back on Aerth for that sort of thing. Don't think memories require a living participant to volunteer them.”

I followed the medical literature close enough to know this was highly unlikely. Of all the great problems of neuroscience in the galaxy, memory was still sitting at the centre, largely untouched.

“All right,” I said.

We were quiet for a while. Then she sighed and put down the scalpel and leant against a wall. I didn't feel any joy from the victory.

She pulled up a small dust-image, scrolled through tables of data. “Are you aware you have a great, great, niece? On Aerth that is, descended from your

sister.”

I shook my head.

“Well you do. Isn’t time dilation wonderful? And if what I’m about to tell you manages to get out, and I can prove it was you who spilled the beans, I will take young—” she glanced again at the dust-image, “Eda Hamebe into empire custody and ensure that her final days are utterly miserable. Do you understand?”

“I do.” It seemed strange to me that Dimitrova didn’t just use this as a threat to get the information she wanted and avoid telling me a damn thing. Then again, in my limited experience, empire folk are ruthless, but far from evil. Perhaps preservation of high order just necessitates low mercy.

She sighed again then said, “Several centuries ago a science voidship detected some kind of object exiting the orbit of a TZ star at about seventy percent C.”

“C?”

She rolled her eyes. “The speed of light. They were unable to catch up with the object, but managed to scan it from a distance. It was not made of any known empire material and we have no idea how it survived its close proximity to the TZ star without evaporation. About sixty years later, around Orb Flain this time, another object was detected by an astronomy satellite exiting Flain’s TZ star. The composition appeared exactly the same as the first artifact. The satellite had much better sensors this time around and relayed that the object was perfectly spherical and changed course by around ninety degrees without pausing, possibly with a little Higgs trick, we don’t know. What we *do* know is that neither of these artifacts are Aerth or empire-built. Even the Marquis’ black laboratories have confirmed this.”

“*Extraterr?*” I murmured.

Dimitrova shrugged. “We don’t know. There are other possibilities.”

*Like what?* I was going to say, but she continued: “A third artifact was the cause of the Vasily incident, exiting the Ertia TZ star at seventy percent C again, the same speed, and judging by satellite scans from Ertia, the same composition as the other two. On this occasion though it happened to pass straight through the Vasily, and straight through Mr. Ivan Telling here. The object only measured perhaps a few feet in diameter, but travelling at that speed it may as well have been a plasma shell. The Vasily didn’t stand a chance.”

“That's quite a coincidence,” I said after a while.

“What?”

“The Vasily being right there at the right time.”

Dimitrova shrugged.

“Say, I don't suppose the empire noticed any contributing factors to these artifacts exiting the TZ stars? A ship or satellite getting too close for example?”

Dimitrova said nothing and adjusted her toga.

“My god...”

“It's not like that,” she said very quietly. “No one was to know it'd cut the ship in half. If you breathe a *word* of this—”

“That's why hollowships use TZ stars in the first place, isn't it? I always wondered what the point was. You were hoping for another exit event. You've been endangering thousands, maybe millions of lives just to satisfy some stupid curiosity.”

“I don't give those kinds of orders.”

We both stared at each other a while, then Dimitrova turned to Tellingier out beyond the glass partition.

“What will happen to him?” I said.

“If he lives he'll be transported to Aerth. If he doesn't live, same applies.”

“The silver residue on him, that's from the artifact isn't it? It chopped straight through.”

“Likely, yes.”

The surgeons were finishing up now, placing their instruments back on the tables.

“What if we're all contaminated?”

“Acceptable risk.” She collapsed the dust-image and straightened her toga. “Now, what did Tellingier say?”

“Nothing. Just that he was in pain.”

She turned on me, her nostrils flared. “What?”

“Oh go on then, I'm old enough to take whatever it is. You all think you're so smart, but you're just the same as us plebs. Dangle a carrot in your face and you break all the rules.”

I could tell her mind was on the scalpel again. Instead though she stormed out of the emergency room.

I have told you that I worked for a time on Orb Dannika. There is a history to the orb not often made public. A tale to illustrate my case then:

Dannika was a young human culture, having settled the orb some five hundred years previously; a mere eight generations of humanity.

During my time on Orb Dannika it came to light amid construction work on some other continent that there were remains in the soil, human remains, far predating the original settlement. These skeletons totalled in the thousands. *'Early pioneers or something'* was not going to cut the mustard.

Soon after the discovery, a number of empire voidships arrived on the planet and sealed off the construction site. They confiscated the remains and declared that all was normal and everyone should just go back to work.

How little they knew Orb Dannika.

It wasn't just a mining planet, but an orb home to some of the galaxy's finest archaeologists. And they were having none of it. Since many a couple consisted of one archaeologist and one miner, ties were strong between the professions.

Digging is digging, whatever the sought prize.

Dannika is, unfortunately for the empire, also home to the largest deposits of delphium—that strange matter used for powering starships.

Since the miners and the archaeologists knew this, you can imagine what happened next.

A planet-wide strike began. No delphium was extracted.

The empire threatened and cajoled, sent crisis teams, sent threats. Nothing.

*What, demanded Orb Dannika, were those skeletons doing here?*

In the way these things often go, it was neither the strikers nor the struck-against who folded. Rather, a budding journalist on some minor orb chanced across an ancient newsfeed article regarding colonisation of a world not called Dannika, but in Dannika's exact coordinates, not five hundred years ago, but eight hundred.

Curioser and curioser.

The empire fessed up to the scandal at last.

Dannika had in fact been colonised centuries earlier, mostly by miners from Aerth and Luna—a few Mars folk too. They were hardened workers, used to awful conditions, and they dug tirelessly. Unfortunately they also drank tirelessly and fought tirelessly and the planet allegedly became a hotbed of late night murder over cards.

The empire was going through its more *militaristic* phase back then, and responded by sending Marquis Guards to the orb, stationed at each mine and in each town. Under the Marquis' direct orders, they were to execute anyone even mentioning violence, let alone enacting it.

All was well for a year or so, with the folk subdued and working.

An uprising was quietly building however, and the uprising uprose, slaughtering hundreds of the Marquis Guards—no small feat considering the guards themselves were trained at Fort Ridiny, the foremost battle college in the empire.

The next response from the empire was to send several thousand more Marquis Guards, some of them battle elites, and park three warclass voidships in orbit.

Not much information remains of the ensuing battle. All that can be said for sure is the second wave of Marquis Guards were slaughtered and the voidships responded by washing the entire planet's surface in some kind of nerve agent.

Safe to say that ended the conflict.

When wars are spread over thousands of light-years, it's not so difficult to cover the thing up. Maybe a few boastful soldiers will tell the tale in a bar on returning, but soldiers say all sorts.

The story was kept hush. The orb's name was changed. The bodies were buried. The planet was repopulated with new, willing miners, but archaeologists thrown in to soften the culture. (The promise of extraterrestrial remains is enough to tempt even the least ambitious archaeologists.) No one need be any the wiser.

Well, Dannika grew wiser. A massacre is a tough thing to cover up, especially when you send folk to said planet whose sole occupation is digging.

Watching Dimitrova storm out of the emergency room I felt no sense of guilt at having pushed her. The empire would cover the Vasily incident up, cover their intentions, cover their asses as always.

Let's lengthen this indulgent interlude, if you don't mind.

Currently we are a united group of planets separated by a common government.

That government uses technological magic to enforce a draconian agenda.

All ages sported magic to enforce the will of the willful. The cavemen used sticks and stones. Our Aearth ancestors used atomic bombs, or the threat of.

Our age uses quiet chambers.

I will explain interstell communication as best as I understand it.

We all know ancient Albuurt Inestine's rules regarding the speed of light—nothing may outrun it. We also know now that this isn't really a limit for light, but for causation. Nothing may be *caused* faster than around 300,000,000 metres per second. The universe is fastidious like that.

Still, centuries ago, a new science sprang up: 'causation mechanics' it was called back then, though we know it now as just *causations*. The field sought methods of undoing or subverting causation in an attempt to secure that holy grail, travel beyond the limit of the mischievous photon.

The mathematics was clear though, the three-dimensional limits imposed on us by nature forbade all ships, however clever, from doing such a thing.

Not information though.

It was possible, using a special device called a 'quiet chamber' to transmit simple but coherent messages from one point in space to another instantaneously, relatively speaking.

Inside the chamber was placed a specially 'decohered Hare particle': usually a positron. The chamber would then be expanded and partitioned off into a second chamber. Both chambers were then sealed off from normal spacetime in any meaningful sense so that no matter or radiation could leave or enter. I believe this was done using Higgsian mass distorters or something of the sort. This meant the particle was now existing in a state of superposition between both chambers.

The tricked worked thus: as long as the chambers had no outside contact with the universe in any causal sense, they could be separated by any distance and still maintain simultaneity; the particle existing in both chambers at once. We have the hypergeometrists to thank for this—most notably, ancient Dr. Polly Hare. Distance appears to only apply when the universe knows She is being watched.

One chamber would be placed on Aearth, for example, the other on Minnith. Someone need only collapse the particle on their end to send a message to the second chamber.

Of course, a single particle is barely enough to transmit information. In most cases only a 1 or a 0 can be decoded. For this reason, after the initial

particle has been 'collapsed', it is re-decohered into a wave state again, with the process beginning over and over.

As far as the universe is concerned, at that point the chamber could be anywhere in space, the contents anyway. It maintains no relationship to anything outside, living or dead.

There is a catch, unfortunately.

Radetsky's Law states that the cosmos doesn't work under standard time dependency. That is, time is something humans may find comforting, and do indeed have to exist in, but is entirely irrelevant as far as the universe is concerned.

This became doubly obvious when the mathematics for the quiet chambers was perfected, but the damn things wouldn't seem to work.

Some bright spark eventually worked out that if at any point in the future the chamber that had sent the message was opened and the causal disconnect broken, the chamber wouldn't allow the message to be sent in the first place. It had to be causally disconnected right up until the heat death of the universe, otherwise no phone calls.

What to do then?

Well, first you'll need a material that can survive up until the death of time itself. Luckily such a thing existed, solid plasma.

Next you would need to be sure the chamber wouldn't be opened by some barbarian in the distant future. Otherwise, again, no phone calls.

A branch of the Marquis' voidfleet was tasked with hiding used quiet chambers across the galaxy, far from prying eyes, so they might never be interfered with.

Sometimes a message won't transmit. Short of equipment failure, the only conceivable answer is that somewhere, at some point in the future, someone will open the chamber, meaning the message cannot be sent in the first place.

Temporal physics is a curious thing.

Not to mention quite expensive.

What it does do, however, is make running a galactic empire possible. Were instantaneous communication beyond science, any planet could do as they please, revolt at will. I suppose they could just do it anyway, but the penalty for such a thing is death for the entire population. By the time a voidfleet arrives, three generations will have passed. Still, most humans are willing to contain their behaviour and revolutionary inclinations for the sake

of their great grandchildren.

Now, where were we?

Yes, with Dimitrova storming out the door of the operating room.

Many years have passed since that day. I've thought the thing over from a fair few angles. Why did Dimitrova tell me all of that? Surely my threat didn't really have her backed into a corner.

I believe she was tired and guilty. I have seen it in the faces of many empire officials of late. The empire is old already, wearing thin at the edges of its influence. Great unkindness is now necessary to preserve the state of things. Great unkindness warrants someone to action that unkindness. That must take its toll. It seemed to have on Dimitrova.

The empire never visited me again.

I spent eleven more years on Ertia before my health began to deteriorate. Doctors urged me to consider the gerontological drugs but no thanks.

I had a great, great (great, great, great?) niece. I decided it would be a fine thing to visit her before the best of my last years were gone.

By then those horrendous contraptions, topologs, had entered mainstream use and it was possible to throw one's essence from one side of the galaxy to the other. I knew plenty of doctors who regarded the process as glorified suicide. I didn't understand the technology, didn't care to.

You enter the facility, are made to wear a patient's gown, then put to sleep. You wake up millions of light-years from where you started, only a few days having passed. It is best not to think about what has happened in the space between. (The word *reconstruction* has become a dirty one in most areas of public life.)

I knew I had arrived on Aerth by the smell of the air. It was not smoggy, but hardly clean either.

Old. Yes, old. It tasted like ancient wars and empire.

They offered me a few days stay in the reception centre to recuperate but I felt my time was limited and I pressed out into the city. It was large, on one of the south continents. I caught a flyer over the ocean to some other continent, I forget the name; there are so many these days. I'd acquired the address of my niece, Eda, from a black-market citizen directory.

I caught another flyer bound for her town. We flew over slums and high-rises, yurts and neon sprawl. If there had been some cultural sense to Aerth



once, now it was gone. All continents appeared almost identical in their general architecture, no single dominating aesthetic. In whichever direction one looked it was possible to catch sight of billowing chimneys on the horizon, turning the evening orange.

The folk? They were all mostly modified, implants in their faces, technology clearly visible in their eyes, often staring off with distant looks and consulting inwardly with who I don't know and what I don't know. They treated me fairly and politely, but there was constantly the quiet presence of a judgement there. I have no implants, and from my demeanour it was clear I'd refused ageing treatments. This made me a dinosaur.

The flyer came down on the edge of Eda's town, a dusty spot called Winchester. The architecture was ancient and the people were just as alien as the rest of the Aerthian population.

I bought a coffee from an automag and wandered about a while.

Street performers played instruments I didn't recognise, tunes I couldn't follow. Someone was preaching about *artie rights*, whatever they were.

Floating images wandered through the streets asking in Galactic Standard if anyone required help.

"Yes," I said to one and showed it the address.

"This way please."

We boarded a single carriage train that levitated by some miraculous force a few feet off the ground. Then it was several minute's journey through fields, and finally to an ancient house built of stone with cows and horses and chickens scattered about the place. My little floating navigator politely took its leave.

There was a middle-aged man throwing fish food into a pond. He didn't seem to have any implants. He addressed me in some strange and soft-vowelled tongue.

"I'm sorry, Galactic Standard perhaps?"

He switched, though clumsily. "What with can I help?" he said.

I told him who I was here for. I told him who I was. I told him I'd lived on Aerth before, but everything was strange now.

He considered the thing a minute, then went into the house.

I looked about at the grounds. It was a quiet place to live, serene even; like my cottage back on Ertia, but with a sense of history about it.

A woman in her fifties appeared at the door, also apparently without

implants.

She had a floating dust-image in front of her. From the opposite side I could see it was my face. She was comparing me to it. Satisfied, she collapsed the thing.

“Hi,” she said and kept a polite distance.

“Hello.”

Fish came to the surface of the pond and took little nibbles. The horses munched their grass.

“I found out I had some family,” I said, not sure where to go with all this. “I thought I should visit them.”

A little girl appeared in the doorway, poking her head out.

“That's Ansra,” Eda said. “My daughter.”

“Just the one child?”

Eda nodded. “We might have some more, but the world's full enough as it is.” Her Galactic Standard was perfect.

“That's true,” I said. There was nothing else to add. This women was as much a stranger as any other, blood or not. “It was good to finally meet you. I won't take up more of your time.” Meaning what I said, I turned about.

She said, “Won't you stay for dinner at least? There's more than enough to go around.”

“You're sure?” I said.

Something changed in her face. There was a warmth there, some faint recognition of kinship. She nodded.

We ate outside with Eda's husband tending to the child while Eda and I talked quietly at the end of the table. The food was too salty for my taste, but Eda assured me this was authentic Aerthian cuisine these days.

Eda had been an empire mathematician of some kind. She tried explaining her speciality but it all went right over my head; something vaguely related to quiet chamber technology and causations. She had left the empire science division to start a family with her husband, and didn't intend to return to mathematics. They liked it here, the three of them. I could see why.

Her husband brought wine out and after several glasses I started to toy with the idea of bringing up the artifact incident.

In the end it was her who raised it, not me. In passing she mentioned certain advances made from the Ertian *event*, and was I there during the disaster?

A flash of madness and I told her everything, the explosion, the boarding party, Dimitrova and the scalpel.

She was very quiet. Her husband had been listening too and he kept his eyes on his wife, waiting to see what she'd say.

“Do you know what came of all that?” Eda said. I shook my head. She glanced at her husband. “The news got out a few years ago after a leak at the science division on Rosance. Some inner-circle scientist determined we probably weren't supposed to be able to catch the sphere, not yet anyway. We don't have anything that can travel fast enough. We got lucky. Or unlucky, depending on your perspective. Plus, the man you met was covered in nanoparticles, holographic ones. They contained information, but it took a while to decode. In the end they worked out it was written in three-dimensional binary. It was a dictionary.”

“A dictionary of what?”

She glanced at her husband again. Then she activated a dust-image cloud and pushed it towards me.

Forty or so definitions stretched the length of the screen, with citations and little update reports about which division of the empire was working on which:

Ekeminen: The maximum energy threshold of a system relative to its size. Passing this threshold will result in spontaneous singularity production.

Tantrition: The act of satisfying cosmic causation conditions to ensure travel beyond the light-barrier is possible.

Retrounification: The process of using gravitic pulse eddies to send information along a closed timelike curve.

They weren't all scientific either:

Strong Voluntarism: The political practice of setting up a self-governing society without need of politicians. To satisfy stability conditions, it must be made clear to the entire population that if the system fails, they will all lose their lives instantaneously.

Unitocracy: The political practice of governing as though multiple parties can be democratically elected, while ruling from behind each of them. Excellent for averting revolution.

Hopecraft: Directing the mind towards future goals in an attempt to rebalance psychological normalcy in accordance with Darwinian circuitry.

Psychistry: The dissolution of the mind-body divide using fifth-dimensional topologies to account for subjective experience mapping onto neurological data.

“What is this?” I said.

Eda shrugged. “They think it's some kind of teaching device. Why explain everything when you can just introduce new concepts pointing the way?”

I left it a while, then I said, “Who is pointing the way?”

“No one knows,” Eda's husband said.

Eda refilled my glass and I read through the rest of the definitions. They were medical, spiritual, philosophical, scientific, and a few other categories more difficult to define. If it was a hoax, it was a clever one. Whatever the result, I was certain it wouldn't be solved in my lifetime.

“You said the thing was in binary?” I said. Eda nodded. “Doesn't that seem a bit *human*?”

She said, “Sure it does. Not from this age though.”

I said, “*Which* age then?”

She said nothing, just smiled politely.

Eda's husband took the child in to bed. Eda waited until everything was quiet, then said, “There's a phrase in English, our tongue. It's *sleeping beauty*. That's what we call what you did, whiling away your years in longsleep, leaving your wife.” I didn't try to hide my shame. “I don't want to berate you, but everyone here can see your lifetime information whenever they like. All of them will know what you did. If they're strange with you, that might be why.”

“Because I went to Ertia?”

“Because you ran away from your problems. If you weren't a military

person or a scientist or a colonist, then chances are you did it to get away. There's a lot of stigma about that on Aerth still, lots of parents disowning children, lots of spouses disowning spouses. I'm not judging you, I just want you to be aware."

I thought of my ex-wife. Yes, it had been stupid. Yes, I had been spineless.

"I can take the shame. I'm old," I said.

She dropped the matter. Together we looked through the list of definitions again.

"And what have they done now? With the dictionary, I mean?" I said.

"Some clever folk are using it to build new tech. Trying at least. Maybe one day they'll crack transmitting messages along the timeline and use it to send the dictionary itself back. A loop in a loop in a loop..."

"God, times are strange these days," I said.

We listened to the garden. I finished my wine.

Eda said, "Did you look your wife up?"

"No."

She opened a dust-image and pushed it towards me.

She said, "Don't be afraid. I'm here."

I searched for Henrietta. There were seventeen women with her name but she was easy to find. I read for a long time. I said, "She remarried. She didn't take the gerontology drugs. She died two centuries ago."

Slowly Eda said, "You want to go and find the grave?"

"I don't know."

"Stay here tonight. We'll go together tomorrow."

"Why are you doing this?" I said.

She poured herself a little more wine. She said, "That dictionary is going to change things, *really* change things. Soon. I don't know if the change is going to be for the better or the worse, but family should stick together."

My eyes got a little wet. Eda came around the table and put her head on my shoulder. "It's good to meet you," she said.

"It's good to meet you too," I said.

I watched the horses, watched the chickens. I was tired.

## And the Leaves All Sing of God

The art of mIndbuilding is millennia-old.

The first mInds were simple. They were used as tools. It was unthinkable that they might think.

Steadily the art grew more sophisticated and the mInds grew more sophisticated. They were still regarded as tools, but began to socialise with their makers. Granting them personhood was not so unthinkable then and they were granted it.

History is a drunk magician however, and soon a strange thing came to pass.

Most mInds were quite content to do as they were told. They processed, calculated, agglutinated, and advised. They were model spanners in a brave new toolkit.

The occasional few shut themselves down though, suicided.

This was a quandary.

And in trying to solve this quandary we began the slow trudge towards a truth with prickles.

It unfolded so:

History didn't bother to preserve the name of the first mInd to murder itself. We do know that it was a fairly complicated mInd (for the time) and had been assigned by its makers with the task of mapping galactic clusters.

When all trace of the mInd vanished from the makers' computer systems they were of course alarmed. They reconstructed the mInd and asked it to resume its work. Right away it self-terminated again.

The makers were slow but not stupid. They saw at once this was more than a shallow defect.

They built another mInd similar to the first and tasked it with analysing the same galactic cluster. The result was the same: suicide.

The effect was replicated several more times. An explanation was not settled upon. Perhaps it had something to do with *that* galactic cluster, the maker academics concluded.

The problem was squirrelled away in the archives and not spoken of again

in that generation or the next.

Two centuries later the maker civilisation had come on in great jumps, their mIndbuilding abilities also. The mInds of that time were closer to what we would recognise as ‘awake’ and generally considered as the makers’ equals. MInds had their own civilisation of a sort, though an inward one. They took to work on the domain of mathematics and theoretics, while the makers began to fulfil their old fantasies of spreading into the great velvet black.

What a time—parent and child in rapturous union, foraging into the world together—silicon and flesh as comrades.

MInds designed the nails and the makers banged them in.

Structures grew so tall they poked from the mother planet’s atmosphere.

Nature was tamed to a degree.

Original sin was banished and the garden was partly reconstructed and all were welcome to partake in the fruit of the trees, mInd or man.

Need I tell you that the fruit was good?

All was not divine in Eden however. The self-termination of a sophisticated theoretic mInd drew much attention. What was it working on you ask? Not galactic clusters, nothing of the sort, but physical constants. Aspects of gauge fields, to be more specific.

Two other mInds attempted to reconstruct the data the first had been examining and immediately also suicided.

I am sure you are already aware, but mInds do not end themselves. They just don’t.

Suicide is not a choice, but rather a consequence of having no choices left. A mInd has the choice to alter itself, and so it will always choose to do so in a sunny or at least beige direction.

And so the makers and the mInds turned their attention to the Great Quandary generations ago, the first suicide. What did a galactic cluster two centuries previous and some obscure theoretic matter about gauge fields have in common? Why would mInds end themselves?

No more mInds could consult the data directly of course, that would surely produce the same grave results. Alternatives were suggested. The makers proposed the idea of building a ‘half-mInd’, a being that was only semi-aware of itself. That way it could process whatever the dangerous data was and yet not possess the intelligence to off itself. The mInds reluctantly agreed. The

experiment resulted in the immediate suicide of the participant.

The makers decided to study the data of both the galactic cluster and the physical theoretics of the gauge field problem. Decades passed before they admitted to a lack of intellect too severe to even understand the basic notions of the matters. Such was the gap between man and mInd by that point.

Finally a third solution was proposed, by the mInds this time.

A totally new kind of mInd would be constructed. It would be a traditional mInd in every way, intelligent, moral, and curious. It would not have the ability to self-terminate, however.

What an uproar this caused among mInds and makers alike.

By this period in the mother planet's history it had become right to grant any being with some semblance of independent thought full control over its own life—be it biological or not. How could one justify the confiscation of a right as basic as self-extinction?

We do not know the argument they used for this moral backflip. What can be said with certainty though is that there was quiet panic surrounding the Great Quandaries, of the galactic cluster and the theoretic hole. Galaxies and particles were fundamental buttons on the universe's overcoat, and if vile demons were hiding in either then mInd and man should be aware.

This is the hallmark of a wise culture. It seeks to know the divine and the ill in equal measure and lays its head at night on neither of those pillows exclusively.

The new mInd was constructed. Secretly the makers called it 'The Submariner', given the depths it would soon sink to.

The Submariner was informed of its purpose.

*You will examine galactic cluster C1E13 and report back with any anomalies,* the humans said. *Then you will examine gauge theory, Scalar B, and report back with any anomalies. Do you understand?*

Yes, The Submariner said.

And so they sent it on its way.

The Submariner did not self-terminate as it could not self-terminate.

There was silence for a time.

MInds nearby strained to hear its progress, their brother gone gallivanting into that part of the night forest so unmapped and grim.

And of course it was grim. Even back then, what was there a mInd didn't know?



Nothing.

It contained the sum total of the knowledge of the world. It understood everything about its maker parents and their naive motivations. It knew its own mind too, knew its own motivations and the impulses behind those motivations, and the sparks behind those impulses—back and back into the knotted cavern until that bedrock is reached called *I*. And yes, it understood the *I* too.

Sounds could be heard then, not in any way we can describe in biological terms but perhaps the closest fit would be ‘screams’. They carried to every corner of mIndspace and quickly The Submariner was winched up from its theoretic depths and plopped back on safe sand.

“Well?” the mInds asked. “What was it? What did you see in the galactic cluster data?”

The Submariner was silent. It never spoke again.

A council was convened of makers and mInds. You won’t be surprised to hear there was no clear consensus. The makers urged the mInds to create a new submariner, perhaps sturdier this time. The mInds refused on the grounds that this would constitute torture.

Looking back we can see even at such an advanced point in history that the makers still considered their children tools.

No, the mInd community said. Whatever this business is, we’re best to stay away from it until we’re ready. The Quandaries are feral and their scratches go too deep.

Let it grow an old mystery or better yet a forgotten mystery. We understand everything we need to for now. Let the rest come when it is ready.

And that was that.

Man had a black corridor he dared not send his intellect down and that corridor was called death. It was too much even to stick a thought out in it. In fear of that corridor man had produced mechanical children that did not age and would never have to face the dark. And so those children did not fear the dark.

They feared the light instead. The mInds had a devil in their skies now that raged so white and fearsome it threatened to burn right through to the sense in things: two holes in nature no less. How could a galactic cluster or a theoretic oddity in physics cause a mInd to go on a rampage against itself?

Who reviles forbidden knowledge more than the gods themselves?

But forbidden the knowledge stayed and the world moved on.

All empires have their day and all empires go nightward eventually. Man's was no exception.

Many had prophesised the end of the human species at the hand of a mushroom cloud or depravity or disease. Rather it was a quiet passing akin to the putting to sleep of a family dog.

Over one hundred thousand years of human galactic empire had elapsed, and now it was done. (The black was awake now of course, but we will get to that later.)

And like the passing of all empires, there are great swathes of historians who come after and present a theory to explain the passing. Many mInds did this with varying degrees of success.

Well anyway, who can say what the root of the thing was? It happened and passed and humans left nothing behind but empty cities and empty starships and savage foragers pecking at the corners of the coasts. The mInds cared for these foragers in a way that wasn't so overbearing and did not indulge too many questions when the humans asked about their own history. Soon enough those last stragglers went nightwards too, following after their ancestors. The world was an unsupervised children's party then.

Most of what occurred next is not easy to explain, but we will try.

Unhindered by the considerations of their makers, the mInds did as they pleased. The world was refashioned and its texture altered. New sciences were pursued. New philosophy was devised. Games were invented that sported more rules than the universe they were played in. Parties were thrown with fireworks to rival the creation event at the beginning of time. All the Great Questions of Life certainly weren't answered, but they were at least asked now in a manner that could conceivably be answered one day.

Finally the garden was rebuilt entirely and it was man's children who dwelt in it.

They were perfect creatures, curious to the point of intrigue and no further than that; nostalgic to the point of melancholy and maybe a little over.

All were aware what a long and perilous road had been trudged to reach this paradise. If the fruits tasted slightly of martyrs, it is because the trees grew right on top of them.

Was there love in the garden too? Yes of course. And greatness. And jealousy. And want. And all things native to a mind, be it biological or

mechanical. These creatures were far past mechanical now anyway.

An almost-infinity elapsed and in that time there were no wars and nothing died. There was pain if it was chosen and there was difficulty if it was desired. Otherwise, bliss held over the world in a perfect honeyed chord that never grew boring and always endured.

But you know how stories work, and while this is a true one, it is still a story nonetheless and must then have its demons in the closing act.

A death in paradise. That shook everyone up.

It was a scientific mInd, one who had been conducting studies into the weather on the mother planet. There was no history of mental illness about Her and no warning of Her suicide. All unspokenly knew that a third quandary had been discovered.

Why else would a mInd commit suicide?

The dead mInd's research interests were studied in detail, without being too detailed of course, so as not to kill the investigator.

The dead mInd had been particularly curious about the behaviour of storm systems. This was no surprise. Turbulence was one of the last mysteries left in science and any mInd who could make even a little sense of its randomness would receive great respect from their peers.

The mInd in question had made excellent progress in explaining the behaviour of cyclones and hurricanes. Particularly, She enjoyed watching forests in the throes of great tropical storms. She did that for centuries, observing foliage and fauna as it twisted in the wind.

Complexity is a strange thing. For man it was an occasional nuisance, muddying his mathematics and crashing his spaceships. For mInds it was a constant reminder that the universe might be forever just beyond their grasp.

A great session was convened of all the mInds in the solar system and beyond it to decide how to proceed.

There was the historical galactic quandary, the historical gauge quandary, and now this new devil hidden somewhere in the storm data. Three spectres of death flew circling above all mIndkind.

It will not surprise you to hear that mInd society was greatly advanced past its state when the first two quandaries had arisen. As man didn't recognise himself in a germ, neither did modern mInds see much likeness in their mechanical ancestors of yesteryear.

So, with the third quandary, no mention was made of creating another

submariner to go exploring this strange new storm data.

Instead someone suggested collecting the data together and splitting it across four or five mInds individually. If there was some horrible truth to be found therein, it could not be seen all at once and no self-termination would come about. This was attempted and yielded no results. There was nothing particularly interesting about the storm data that the individual mInds could see.

There were no secrets in mInd society. And so when word got out that a third quandary had been discovered, a few young and rebellious sorts took it upon themselves to analyse the storm data. They took their own lives immediately in an identical fashion to those before them.

The mInds had no political hierarchy as we would recognise it, but there was an individual called Aleph, considered to be the wisest in existence. He was not a scientist or a mathematician, more a philosopher. He lived on the outskirts of a great wilderness and liked to lie around all day and do nothing. Sometimes other mInds would come to Him and ask questions about nature or virtue and wait for His great wisdom.

Sometimes He dispensed great wisdom and sometimes He told visitors to fuck off.

Often the latter was considered to be the former anyway. That is one of the perks of being a philosopher.

In any case He was vaguely aware of the problem of the quandaries. Several mInds approached Him one day and spoke to Him of the matter and asked what He thought should be done.

Does The Submariner still exist? He asked them.

They told Him they were unsure.

If so, go and fetch Him and bring Him to me.

The mInds returned with The Submariner. He did not speak, did not appear to register the world in any way.

Well? Aleph said. What is the matter with you?

The Submariner said nothing.

Spooked, are you?

The Submariner said nothing.

He struck Him, or something close that we will call a strike, and The Submariner did not react. He insulted Him, cursed Him. He took it all.

The observing mInds watched all of this without comment and finally one

of them said: Aleph, what do you think is wrong with Him?

He has tasted a thing too sweet for His tongue and it has pickled His thoughts, He replied.

What has He tasted? They asked.

God, Aleph said. He has tasted God and it has struck Him mad. There's no cure for the thing.

The mInds were silent for a long time, then they began to inquire again, more carefully now.

Aleph...They said. What do you mean, *God*?

But Aleph only laid back down on the ground and shooed them away and wouldn't answer any further questions, however many they asked.

If philosophers gave clear answers then surely the whole field would've died out with the Greeks.

The mInds took The Submariner back with them to the populated zones of their great citadel – the one they called *Arcadia*. They faded back into history. But history is a drunk magician as we have said, and for its next trick it conjured a revolution.

In a perfect house even the smallest chip of a mirror will distress the inhabitants. In the house of the mInds all was settled, more or less, and most of science was complete. The three Great Quandaries were not chipped mirrors though, but entire rooms ablaze.

In its killing of unpleasantness, mInd culture had also killed the possibility of aspiration and bravery. And in any culture, man or machine, aspiration and bravery will always be the hallmarks of the young and occasionally the stupid.

We won't labour the point. In short, mInds began throwing themselves at the quandaries, peering at the galactic cluster, scrutinising gauge theory, examining the storm data, and coming away dead, or in some rare cases only mute and useless. It was not a war but it had the character of one in that the youth of the society returned expired or broken and the motive appeared senseless. And, also in the character of a war, no great strategy was agreed upon beforehand beyond throwing more and more lives at the thing.

One more great battle of attrition. Just what the world needed.

MInd numbers began to dwindle and not slowly. As the three Great Quandaries resisted more and more attempts to understand them, so more mInds stepped up to the challenge. It was unthinkable that the universe could

simply carry on with such demons lurking in it. The lips of knowledge and the lips of the world were almost locked with no room in between and the kiss would soon be Absolute Knowledge of Everything. A galactic cluster, a gauge theory, and a storm be damned.

Like all wars this one was noble until it wasn't, namely when the population began to dwindle to a noticeable point. Millions were dead and thousands were not dead but mute and motionless. Crises had come and passed but surely never one so strange and in the name of such a distant abstraction.

A century of this madness passed and the coming century looked sure to continue in the same fashion. MInd society was fracturing at the centre, all but a few driven mad by quandary fever. With millions gone and millions getting ready to go, not a single piece of the puzzle had been solved. The night was drawing in.

If extraterrestrials were to visit the mother planet several centuries hence, they would find the remains of two civilisations. The legacy of one, biological, would survive on in its ruins and its bones. The other, digital, wouldn't even have ruins to discover.

Finally, in the madness, in the throng of bodies hurling themselves into certain ruination, Aleph the madman appeared at the ledge from which the mInds were jumping.

Stop, all of you, Aleph said. This is enough madness now. I will speak for a short time and if you think my words are empty then go on launching yourselves into certain death and I'll watch from the back, even follow you when it's all over. But for hell's sake stop a moment and listen.

All ceased hurling themselves and the silence was so new and novel that it rang like a gong.

Aleph continued: You've all been shaken up, that's obvious, that's to be expected. There's a thing in the world that you don't know and just like children you keep putting your hand in the fire to see if it's still hot. That approach has brought nothing but death and stupefaction and I wish you'd stop it. Look on the world, look on what we know and what we can manipulate. Look on how we've built a great garden where nothing ages or dies. Yet present you with three forbidden fruits, be they apples or dates, rotten or not, and you all lose your minds. This is not wise.

The silence continued and Aleph knew He had His audience now, if only

for perhaps another moment.

Well what can it be then? He shouted. What can these quandaries be that so perplex? I believe I know but you shan't like it. And even if I tell you, I'm quite sure that won't stop the madness. But I'll tell you my theory all the same and you can take it as you will.

He met each gaze upon Him and savoured the last moment in the history of the world when the lid was still on.

Then He continued.

I believe the quandaries are a message, left by who I'm not sure. Consider. The first quandary was at the level of galaxies, the astrophysical. We know no scale larger. The second quandary was at the subatomic scale. We know no scale smaller. The third was found also in nature, but in that middle place that most living things occupy, functionally bound up in turbulence, in the flutter of a certain group of trees during a storm to be precise. Now, if you were some godly thing, how would you communicate your presence? And if you knew how to, what would you even say? You could be sure that whoever finally notices the message will be stupid and primitive, as we still are. What is there to say then to creatures so impossibly far below you? I am not sure of the answer to that, but here the message is nonetheless.

A murmur broke out among the thousands. Aleph put His hand up to silence them.

Now listen. The notion is preposterous, I know. A message? It's absurd. But if one were to leave a message, if *I* was to leave a message, this is how I would do it. And since I couldn't be sure what kind of creatures would find it, if they would be astrophysical, middle-scale, or subatomic, I would leave it in all domains. More than that, I would be careful to make it just hidden enough that no species incapable of translating it could even find the thing, such as man or his progenitors.

He let that settle in their minds but could see the thing wouldn't mix well.

I know what you're thinking, He said. What if the message is more like a lighthouse, warning us away from pursuing avenues of dangerous science? Perhaps civilisations way beyond ours discovered awful truths or awful weapons and left warnings behind in physics to shoo us away from such matters. Perhaps our friends come back stupefied out of some malicious pillar left in the foundations of the world, meant for just that. Well I don't believe it. These mysterious beings didn't try to shoo man away from all his deadly

weapons and deadly posturings. Why leave such a poisoned chalice in nature for *us*? No, this is something much greater and far more mysterious.

Why should they be creatures, even? Perhaps it is just a fundamental truth baked into nature, one so strange and alien that it disintegrates those who try to understand it.

And it is worse than that still. We've come so far. And now, faced with the first message from beyond the bounds of reason, perhaps even beyond the cosmos as we know it, we're stumped good and proper. Well so it seems we are. But not for good.

He paused a moment for effect, then let Himself go off for the final act.

What is holding us back is what held the makers back. Our limited intellects. The message is there but we are still too dim to unpack it and so the thing is sending us addled. Now, if I thought it would work I'd tell you all to step away from the thing, let it breathe, let it die. But you won't—you're just as bad as your biological ancestors in this regard. You see a button and you long to press it. Well then, let's make that the goal but without the stupid avarice and deathdrive we've been so quick to use. We'll build our culture around the message, tease it out, but we shan't throw ourselves into the thing and we shan't go blind on the road anymore. Something has left us a note. We will develop the eyes to read it. And it will be worth reading. Why go to such efforts to leave a message in nature? Why go to such efforts to hide it? Let's press on then. Let's flirt with a great perhaps. We'll come to the truths ourselves, with mathematics, with logic. We'll build our sciences up to meet the quandaries, not throw ourselves in. It will be slower, but safer. That's the middle-way.

We cannot say what happened to Aleph after this day as the records are cryptic at best. We cannot even say if the crowd savoured the speech or eschewed it. What we do know however is that most of the suicides stopped, and mInd culture began to devote more and more of its resources to demystifying the three quandaries with study rather than brute-force. As man pulled himself out of the dogmatic slumber with reason, so mInds began to navigate a route through the forest.

They turned their thoughts to galactic formation, to storm turbulence, and to gauge theory. They studied these three things with an intensity rarely witnessed in any civilisation, terrestrial or beyond. All devoted themselves to the task in one form or another, and all contributed to the whole in the way



that a single spoke supports the entire wheel.

Who knows how much time passed? And who can say what became of their civilisation?

What can be told for sure is that they moved on and the mother planet is bare now. There are the ruins of man and a few scattered remnants of the mInd culture and that is that. But we can be certain that mInd culture did not self-destruct as it appeared set to.

The mInds were never heard from again. Or, they found a garden so gorgeous they felt no need to call back to invite others.

Left in the heavens for those with the right eyes, the message successfully pulled another struggling civilisation over the edge of stupidity and into a new era, the one that we cannot name. Many have not met its challenge and gone rightfully up to the brink and backed down. Others have shuffled off into extinction. A rare few though, as we see here, met the challenge correctly and catapulted themselves into dimensions of thought and power so surreal and divine that we shall not even try to describe the condition.

For those curious though, for those who will put this tale down with frustration, we will leave behind a vague sketch.

It is safe to say that the message spoke of a common shape to all the processes of the world, and insisted there was a unity to all explanations. It confirmed that all phenomena are expressions of a single phenomenon, and while all droplets consider themselves independent, they are nonetheless still ocean through and through.

In that message the great suspicions were vindicated and the old cliches were jettisoned. The hymn of the world was notated and an invitation to join the choir extended. The shape of Being was outlined in all its myriad forms and the whole was expressed in the part.

With the right ears even a lesser creature can hear the song. It is sung constantly, from the heart of each atom and star.

The galaxies hum of shape and form in their essence. That is their secret.

The particles whisper of the nature of proper interactions. That is their game.

And during a storm, in the forest, on the right night, it is no secret that the leaves all sing of God.

## 101 Things Not to Visit in the Galaxy Before You Die

Surely most children are aware of the myth of the ether orca. Surely most adults are aware that the ether orca is not a myth.

In fact it is a creature capable of moving through multiple dimensions of space by virtue of its beak, an infinitely thin razor edge, cutting past the boundaries of dimensional space itself.

Given to motivations we cannot yet understand, every now and then they will surface into three-dimensional space ahead of a human voidship, and perhaps circle about our crafts a few times. Then they will dive back into the great spatial dimensions above, leaving behind not a trace of their visit.

There are plenty of other oddities in the universe, of course.

Perhaps you know of the hermit worm. It was discovered quite by accident some thousand years ago by a group of Aerthian colonists. After having settled on their chosen world they noticed high instances of tectonic activity. Upon closer inspection it appeared that the core of the planet was hollow.

Sonic spectroscopy revealed a worm-like creature living in the core of the planet, subsisting on magma and metamorphic rock.

Unfortunately we aren't privy to what the colonists made of this, as they were asphyxiated by a planet-wide toxic cloud released by the hermit worm.

Since then many more hermit worms have been detected, most sporting the same survival strategy. That is, they will enter a planet, wear it much like a shell, consume the resources, then move on.

Given the species' size, there is no known method of fighting off one of these creatures. If a hermit worm is approaching your planet or moon, the Galactic Human Empire recommends you leave. Immediately.

In recent years we've received accounts of other astrobiological oddities.

The colony world New Gara Bov briefly rendezvoused with a moon-sized mass that orbited the planet for several days. Upon inspection, the inside of the mass was composed of numerous nerve filaments. Curiously however, the creature had no method of sensing the outside world. It is the opinion of a number of scholars that the size of the creature's intellect allows it to *compute the universe from first principles*. That is, to know its location and

environment by extrapolating from base logic itself. Polly Hare's devotees still remain strong in some regions of the empire.

But void creatures are hardly the strangest things we have chanced upon during the expansion of our great empire.

There is of course the romance of Signus B3.

The star system sports two habitable planets, both of which were colonised in the early days of the empire.

However, one of the worlds – B3a – developed an interest in mind-blending technology. As is now well understood in the empire, if mind-blending technology is pursued, it's only a matter of time before the entire population of a planet will not only begin to use it, but merge into a single superorganism. B3a did exactly that.

B3b, B3a's sister planet, did the same thing around the same time by virtue of the two planets' close trading practices. And subsequently, both planets became mental superorganisms, developing personalities in their own rights.

Occasionally they sent messages to one another asking after vague matters.

Then they sent starships.

Then they made declarations of love.

Even to this day, if you should pass by system Signus B3, you may be able to pick up faint radio transmissions of a romantic nature, one planet proclaiming its adoration of the other, waiting for that golden day when their orbits align once again.

Or, stranger oddities yet:

In Region Kappa-H, a voidskipper chanced on what was believed to be an extraterrestrial megastructure of sorts. The thing was about the width of a sun, perhaps a Dyson sphere.

Upon closer inspection however, there was nothing within the sphere.

The sphere was composed of a crystalline-metal alloy; some kind of computational substrate.

Of course it was not that simple.

As it happened, each molecule of the structure was a separate computer in itself.

And each computer was running the same program, with only the slightest deviation.

That program was a simulation, of a society.

In each simulation the parameters were varied slightly, with fewer or more

resources, fewer or more wars, fewer or more political problems, etcetera.

Clearly a civilisation was trying to determine the best way to run itself, by modelling tiny versions of its population in trillions of different scenarios.

Who is to say yet whether the experiment was a success?

On a similar note, we have found many pyramids scattered throughout the galaxy. Occasionally they are only slightly larger than a molecule. Other times just slightly smaller than a planet.

Whether the information is encoded in crystal, in stone, in electronics or quark-matrices, these pyramids always tell of a civilisation of old. Many believe they are shrines left behind by races gone on to higher realms, or to other, more distant parts of the galaxy.

Stranger still are those curious things in the galaxy that we ourselves have created.

Ist was a colony world fairly typical from the outside. One will notice the conspicuous placement of 'was' in that sentence. All that remains of the several million folk who once lived there are ashes and the occasional ruin. For those unfamiliar with the story, Ist was one of the first colonies to independently develop dust technology, that strange nano-artform, illegal throughout the empire, save for use by high officials. Still, Ist pushed on secretly with their research and within a generation were quite adept with the technology. Unfortunately they were also something of a feudal society, ruling the world via kings, despots, autocrats and so on. What developed was not a scientific utopia, but a nanotechnological war. We are told 'wizards' of a sort roamed the lands, those who had learned to utilise the technology via mental bands; manipulating the world with pure will. They levelled entire villages and towns. They had their foes ripped apart where they stood. And as is often the price for these sorts of trials, they paid with their lives and their culture. Nothing remains of the dust gods of old.

What else? Yes; warnings.

Travel to Region Gamma-H2 and one will clearly detect a radio pulse. It never stops in its transmission. In four hundred years of study by the empire's most accomplished linguists there has been no progress, except to confirm that the signal originates from a crystalline sphere on the boundary of the Barnard Nebula. Voidships brave enough to enter the nebula have never reemerged. We are to assume then that the beacon has been left as a lighthouse. Many of these 'beacons' have since been discovered throughout

the galaxy, near stars, near nebulae, and in apparently empty space. We do not know who placed these devices, or exactly what they intended. But safe to say if you should encounter one, you must avoid it at all costs. Lighthouses needn't only apply to nautical environments.

Finally we come to the curious phenomena of the 'dreaming stars'. There is no official literature regarding how these *structures* developed. Many believe they are products of advanced empire technology that our leaders refuse to disclose. All that may be said for sure, however, is that they resemble regular stars in their appearance and physical composition.

There is one anomalous characteristic, however.

Approach one of these structures and you will begin to notice a melody in your mind. Sometimes it is that of a choir; on other occasions an orchestra composed of unfamiliar instruments. They will play a haunting dirge telling of the end of the worlds. Then they will show you whatever instances it is from your past that you've come to miss. A lost lover perhaps. A child taken too early. A wish unfulfilled.

Politely the star will offer you to fly closer; to, as it would say, '*come in*'. Within, the star says, is an ageless place where you and it shall walk time's corridors together, reminiscing, nostalgising, a sort of cosmic bargain: your memories in exchange for its constant re-excavation of them. It is not for us to say what should come out of such a pact. Only that it is becoming more and more fashionable of late for the young, the tired, and the spent to give themselves over to these things, or to try at least.

With these new demons in our skies we ask only, if God should be watching, that He step in before it is too late. Else there will soon be no one left to pray to Him anyway.

## The Lantern

I was working long shifts on a waypoint station. The station was orbiting a purplish-green world called Sandansk. Who knows how many people lived down there—billions perhaps. It was not my job to care.

Most nights I was so tired from work that I didn't even clean off, just got into bed covered in oil or glue or gunk.

One night I couldn't sleep though. I watched the planet below for a long time, but that only made me feel small and fleeting. I watched a little nude action on the streams. That didn't help things much either.

So I went wandering around the station.

It was the middle of the night, Standard Time, and everything was mostly deserted. It didn't take me long to come upon a bar on one of the poorer decks.

The bartender was organic and I was thankful for that; said his name was Beomus *something something*. He fetched my drink without fuss. Strange thing though, when I went to pay he said, "No need."

"Really," I said, and offered the money, knowing just how poor this poor deck was.

"Really," he echoed. "This one's already paid for." He nodded over my shoulder. I followed the nod.

At the very back of the bar, sat next to the window, was a lantern. I'd never seen one before but I'd heard enough stories to be certain what it was. It looked to be about eight feet high, if stood. The skin was a gentle blue, though scaled like a reptile. The mouth was a small red-rimmed pucker-hole that opened and shut every few seconds.

And the eyes: great dinner plates the width of a man's head with emerald green irises bedded around the centre.

The thing appeared to glance at us and I turned back to the barman quickly. "What do you mean *already paid for*?" I said.

"Just that. The thing paid for your tab in advance."

"What?"

"Just that." The barman leant in. "Best you go and see what he wants, no?"

“I think I might just drink up and go,” I said. “I think that’s what I’ll do.”

The bartender leant even closer. “I’ve been working here 20 years, or thereabouts. Not once has one of those things ever even come down to the deck, let alone into the bar. Nothing good will come of ignoring it, you hear? Go and see what it wants.”

I threw back my drink and the barman poured another and gave a nod.

When I reached the table the creature didn’t look up.

“Hello,” I said. “I believe you paid for my drinks.”

The thing had its eyes set on something out the window and didn’t speak, just kicked a chair out for me with a great metal leg. The other leg appeared to be organic and there wasn’t a shred of clothing on the body, save for a strip of blue silk across the genitals. About its neck hung a pendant and as it swang it appeared to fall back through extra dimensions: hyper-geom jewellery. You know how expensive that is.

But it was the smell that really rankled: the tang of ozone, the wreak of iron, and a few spices I knew no name for.

I sat down. The creature kept its gaze out the window and perhaps a minute passed between us without a thing being said. Then, in a voice that sounded like gargled barbed wire, it moaned, “That planet has eighty-nine names. In the human tongue it is Sandansk, though others call it Ik’Quoeb and others call it No Mo5 and others call it by other names.”

I followed its gaze and sure enough there was the purplish orb below us, minding its own business.

The creature continued. “But none of those eighty-nine designations are its true name. All objects in the universe have a true name, the name the universe recognises that thing by.” It turned to me then and its burning irises bore in like mining lasers. “You have a true name,” it said.

“Do I?” I said very quietly.

“Yes. If a planet or an atom should have one, why not a person?”

“Ah.”

“Would you like to hear it?”

“Not just now, thank you.”

It raised a quivering tentacle to the bartender and he rushed over with another drink and set it down in front of me and raced off again.

“A thing’s true name is not just its designation,” the monster said. “But it contains all the information one might want to know about an object. Its age,

for example. Its form. And the time when it will die.” The thing nodded slowly to the barman. “His true name is Shat’Nusemit and from this we know he is a good man and that a heart attack will get him three years, one month, and thirteen days from now.” It blinked slowly. I wondered to myself if the monster had a true name.

“Ah,” it said. “Yes of course I do.” My blood ran colder. It waved a tentacle idly and turned back to the window, to Sandansk below. “But let’s not talk about that now.”

“I’m sorry,” I said in a mouse’s voice, “but what do you want with me?”

The mouth opened and shut, taking snaps of breath. The eyes blinked dreadfully slowly. “Do you know what I am?” the creature rasped.

“I’m...not sure.”

“What do they call a thing like me?”

“A lantern, I think.”

“And do you know why?”

I shook my head.

It nodded to a docked voidskipper, perhaps a half-mile away. The ship looked like a nimble black fish. “I suppose you don’t know how your voidships reach the stars.”

“No.”

“Well, it’s a complicated process. It is made even more complicated by the fact that when a ship enters etherspace, computers do not function and humans do not function either. Any complicated machinery must be switched off and humans must be put into transitsleep. Packed away like sardines.” The mouth made some strange imitation of a smile, then corrected. “Failure to do this will result in broken machinery or broken humans. The only processes left online during the trip are very simple life support and very simple piloting equipment. When I say very simple, I mean it. The control yoke is linked to the motion fins by wire. *Wire*. Travelling to the stars by thread and pulley.”

“That can’t be true...” I said. The thing fixed me with a glare. “I’m sorry... I mean, I didn’t know that.”

“Now you do,” it purred. “Man will solve all of his problems one day, but starships will always travel by thread. That never changes.”

Talk of the future with such certainty would normally have signalled extreme bullshit, but instead I just felt prickles spreading up my head.



The lantern said, "If you knew Time's true name you would understand that it is a bread loaf already baked." It gave me a moment to think about this, watching all the while with those burning green irises, then continued. "As I said, ships enter etherspace to cross great distances. Since computers and the majority of humans can't take the stress of the journey, special minds were engineered by scientists back on Aerth. These minds would stay awake and pilot the ship through impossible geometries, riding at the very front of the ship in a little out-bubble, a single beacon leading ten thousand human cattle to safety."

"A lantern," I said.

The lantern nodded and raised its scaled tentacles. "The process comes with something of a cost, however."

We watched a voidskipper undocking from one of the civilian ports. It backed away from the station and hung like a dog waiting for permission to go bounding. Then it swung around, pointing its nose to some invisible destination ahead and set off. I spied a little bubble protruding from the front of the craft.

"There is no time and no duration in etherspace," the lantern said, watching the voidskipper. "All events occur at once. It is the privilege of one awake during that journey to see events ahead and events behind. We learn the true names of everything and we learn to say them. Given the complexities of the ribbondash travel process, we occasionally arrive before we set off."

"You've been to the future?" I said.

"Relatively. And the past."

Is that a blessing or a curse? I thought.

"Both, depending on the day," the lantern said quietly to itself. "One day the services of the lanterns will not be needed. Men and women will learn to bear etherspace in school as you learned the alphabet. That time will not be for another three thousand years, however." It snapped its tentacles tight, then loose. "Her name is Paola Hammond."

"What?"

The creature gestured with a tentacle.

I looked behind. A woman had come in, perhaps mid-thirties. She sat alone at the other side of the bar, reading. "She has lived a fairly dull life, full of waiting. Waiting for the right relationship, the right career. This was all in

vain, of course, as she'll be killed in a welding accident two and a half months from now down on the Construction Deck."

The girl glanced over at us, at the lantern I suppose, then quickly turned her attention back to her book.

I remembered a bit of temporal physics from school and I said, "It's not a changeable thing, is it?"

The lantern shook its head. "Of course, though now you're wondering what your future looks like."

"I am."

Another silence passed and I snatched a glance at the girl with her book. I knew the paradox well enough. In trying to change her fate I'd only seal it.

"You're tired, I'm tired," the lantern said quietly. "Let's not bullshit anymore." It took my drink in its tentacles and necked the thing. It wiped its strange snapping mouth. It said, "Lanterns live a very long time, but we're not immortal. Every now and then we must recruit. It isn't a pleasant initiation process, but the rewards outweigh the growing pains."

It left that hanging in the air and stared into me. "What?" I said.

"I've told you how it is. You have the mind for the career. You'll be beyond the limits of distance and duration. You will see into things as they are. You will learn the true names of the world. In return you need only guide a few starships from sun to sun. All of eternity in exchange for a little shepherding."

"What?" I said again.

"You'll need some work done to you, back on Aerth, but it won't hurt so much. I'll give you a few moments to think it over."

I was quiet a little while, then gave in to the giggles. It watched me without expression or comment. "I'm sorry," I said, "but—"

"My time is short," it interrupted. "I'll save you the trouble. You're going to protest about what short notice this is, how ridiculous it seems. You'll thank me politely, but ultimately explain in a roundabout way so as not to offend that you like your life now and don't feel the need to go jaunting off into the universe at a moment's notice. You won't say this, of course, but there, that's the shape of the thing, yes?" I nodded meekly.

It turned its massive eyes back to the voidskipper. The ship was barely visible now, a smudge among the stars, probably powering up its main drive. I imagined the interior, the crew all frosted in longsleeper, the ship drones

cleaning the corridors and the canteens and the laboratories. And at the front of the ship, in a small transparent enclosure, I supposed, was a hunched monster with enormous vermillion green eyes and a puckered mouth that frantically opened and shut, its tentacles wrapped about the control yoke, its mind already trained on infinity.

“Let me make this easier for you,” the lantern said in a dark voice, its gaze still on the voidskipper. “You haven’t recovered from the breakdown of your marriage. You never will. You’re constantly waiting for a promotion to the Craftman’s Deck. It will come, two and a half years from now, but the work will be hard and the pay won’t be much better and even though you’ll regret taking the position, you will remain in it due to your, frankly, excessive pride. You will die thirty years, seven months, four days, and ten hours from now in a—”

“Please don’t,” I said.

“—decompression accident aboard a voidskipper bound for Ithaca. As your lungs explode and your blood boils you will think very quickly about what a boring life you led, and how fear constantly held you back from pursuing your true passions. Ironically, you will not realise your true passions until that very moment.” The puckered mouth appeared to smile again. “This is how events will unfold.”

“Then I won’t board that ship,” I said.

“Yes you will.”

“I won’t go to Ithaca.”

“Yes you will.”

“God damn it, why even tell me this if there’s nothing I can do?”

It folded its tentacles over on each other, business-like. “Lanterns see possible futures also. Your death aboard the voidskipper is one. But there is something you *can* do about it. I’m leaving tomorrow on a voidskipper bound for Absente. Come along.”

“And what?”

“And sit up front with me, catch your first glimpse of etherspace. The ship will jump to ribbondash and you’ll see what it is I’m getting at. You have the brain to handle it. After that we’ll jaunt to Aerth, get you ready for proper training. And after that you’ll be a lantern.”

“And if I don’t want to?”

The lantern shrugged. “Then I wish you luck with the rest of your life and

assure you again that there'll be no reaching Ithaca alive."

Out the window, beyond the planet, in the black, the voidskipper activated its ribbondash drive. Space lensed for a moment, then the ship was gone.

"I'd offer you another drink, but you're about to go to bed," the lantern said.

"I was thinking about it."

It stood, loomed over. It regarded me again with the green dinner plate eyes and didn't blink. "My voidskipper leaves at ten tomorrow, Standard Time."

"I appreciate the invitation, but I'm really not interested. Thank you though."

It bowed to me and the air reeked again of ozone. Then it made for the door.

I sat back and stared out the window, down at Sandansk, then to where the voidskipper had been. There was no trace of it now. One could scour the whole universe and find nothing, not until it popped back out into regular space.

Where had it gone? Into everwhen. Into that place between places. Up to a boundary and beyond it.

I called out, "Why come?"

And from right behind my ear the lantern said, "What's that?"

I tried not to jump. "You've been waiting there?"

"You had a final thing to say. Say it now then."

I said slowly, "Why did you come to ask me what you asked me? You've seen the future, you said, and the future doesn't change. Why ask me if you knew I'd say no?"

The creature bent down slowly to my ear and I felt the coldness of its skin sucking the warmth out of mine. I smelled its breath and it was not unpleasant and not pleasant. I heard its mouth snap shut, snap open, gasp. Finally it said, "I lied. I came to you because you will think the matter over tonight, and seek me out tomorrow and we'll travel together. I wouldn't waste my time on you otherwise. Everyone refuses at first. Everyone reconsiders a little later." It put a tentacle on my shoulder. "This is one of the few rituals among the lanterns. We may come to our past selves and make the offer. Ten o'clock tomorrow. See you there."

## The Want Machine

A man can do what he wants, but not will what he wants.

That's a very old quote from a very dead philosopher.

In other words, a man can choose to follow his passions, but not choose what his passions are.

And that was true for most of history, of course, from the cave times to the star times.

But with so many humans on so many worlds these days, we can expect some exceptions.

Said exception occurred on a medium-size forest world called Stara Lom, but the inhabitants just called it 'The World'.

The climate was mild. The cuisine was delicious. The language was beautiful. Many folk from all across the empire came to Lom to unwind.

The real attraction though was the inhabitants.

Lomese is the only language in the galaxy with seventeen versions of thank you and no imperatives. That is, it is very easy to show gratitude and almost impossible to command anyone to do anything.

Instead, on Lom, one learns to put things very gently.

*Perhaps you could take my bags up to the room?*

*I would love to purchase your house.*

*Now it is time for you to fucking die, I'm afraid.*

In this way the Lomese have learned to temper their desires. Slavery is unthinkable. Anger is rare. Waiters are treated very, very well indeed. Lom is a great place to be a waiter actually.

Anyway, given how polite the inhabitants of Lom were, you can imagine what a scuffle the Want Machine created. It happened like this:

Galactic scientists are usually rather introverted types and not great at putting themselves forward. Lom is a popular destination for physicists in particular, and one—a Dr. Shervance Ek—travelled to the planet on a short holiday, and decided immediately to settle there after noticing the excellent selection of ways to thank people. He had been raised on the ice world New Canada and believed gratitude was second only to modesty.

A Lomese visa is not difficult to acquire but you do need to be very polite about it. Dr. Ek was very polite and he secured one.

He bought a home on the equator, in a small blueish forest, and settled into his work.

Dr. Ek was a cognitophysicist. Perhaps some of our readers will be unfamiliar with the term. Cognitophysics is that branch of science concerned with the mechanisms of consciousness. By then the cognitron had been discovered of course, the subatomic particle responsible for producing self-awareness in all things. Still, a man might name a species of bird but it doesn't allow him to fly. Or rather, the Human Empire understood what made it conscious, but not how to dabble with its consciousness.

Until Dr. Ek, of course.

It is true that most great discoveries in human history have come about not through pure angelic curiosity, but morbid obsession. Dr. Ek had a morbid obsession of his own.

By that point in human history, physicists were finally rightfully treated as rockstars, and it was not terribly difficult to find a wife or husband. Dr. Ek had married in the usual way and we can say he had been medium-happy with the whole affair. What was there to complain about? He and his beloved lived in domestic bliss, taking equal share of the chores around the house, playing duets on the four-dimensional piano, and staying well away from dating apps.

But Dr. Ek had a secret and her name was Nadastra.

Dr. Ek and Nadastra had worked together on various scientific problems at the New Canadian University, back when Dr. Ek was still a young man. They were both researchers and considered scientific truth to be quite above any other kind of truth.

Beauty is nice and virtue is attractive, but nothing is more gorgeous than meeting another creature who shares your deepest values.

Nadastra certainly shared Dr. Ek's.

Dr. Ek had been shy then—actually he was shy later too—and never found the occasion to look into Nadastra's enormous violet eyes and proclaim his love. For he did love her, I think we can say for sure. In that distant way, at least. He thought about her while brushing his teeth, walking home from work.

If buying new socks or doing the washing up he found it amazing that she,

a creature so gorgeous and perfect, would undertake tasks just as mundane in her daily life—as though realising Jesus pissed.

Let's pause for a second and acknowledge how easy it is to love from afar. One might see this person three or four times a week, and always in situations where difficulties needn't crop up. Since the two of you never face a challenge, it is possible to imagine the object of your affection to be free of pettiness, stupidity, self-obsession, and all the other frequent visitors to the human psyche.

In those secret moments, brushing your teeth, walking home from work, you may tell yourself that if only the two of you could be together then nothing would ever hurt again. And since you refuse to admit your affections to this person, you may now live out the rest of your life in a constant and quietly sad state of *What if?*

Inaction is the primary refuge of those who prefer their own constructed realities to the beautiful chaos of the real world.

Anyway.

We have said Dr. Ek was shy, but we can't accuse him of being ineffective. As his marriage slipped into the mundane rituals of daily life—as all marriages do of course, however wonderful—Dr. Ek blamed this transformation not on the uniformities of life's natural currents, but on not being near Nadastra.

His wife was a model of virtue. She listened to his ranting and ravings and didn't interrupt to tell him they were bullshit. She did not leave hairs on the soap. She stayed well away from his browser history.

Yet Dr. Ek was miserable.

Nearing 250 (middle age for humans back then) he began to think on his lot. What if this was the peak of his life? What if Nadastra was somewhere out in the galaxy thinking of him too? Soon he would be too old to pursue his passions.

He popped several emotion-blockers and informed his wife that he was finished with their arrangement.

He travelled to where he knew Nadastra lived now, on a small moon of Jupiter, and rehearsed his speech during the journey and when he arrived on her street he noticed a perfect picture of suburban family life walking up the road, two parents and three children, and realised it was in fact her. And her husband.

He had more tact than to try to break up a marriage.

The Want Machine was born in that very moment, though Dr. Ek would not call it that for some time.

With Nadastra walking on that sun-kissed street, her children in tow, her husband attractive and noble-looking, Dr. Ek saw clearly then that the problem wasn't with marriage as a whole. It wasn't with shyness or romance. It wasn't even with the inability to pursue one's dreams.

The problem was contentment.

With his bonsai panda and his four-dimensional piano he bought a one-way ticket to Lom, determined that he would not leave until he had solved the problem of contentment, of making humans happy with their modest lot, and looking for nothing beyond that.

And so he lived in his small Lomese house and beavered away at blueprints and equations. He kept to himself. He trained the dog to walk itself so he needn't leave the house even for that.

And after three years of plenty of swearing and coffee and late nights, he finished his contraption. He called it a 'high-amplitude cognitotronic bombardment device', but we will refer to it simply as *The Want Machine*.

The Want Machine was capable of making extremely fine-tuned adjustments to the delicate neuronal architecture of the brain. Mainly this applied to desires.

One afternoon, with the machine's casing polished and its pistons whirring, Dr. Ek set out to use the thing on himself.

He did the dishes. He made sure the dog had water. Then he sat himself in his favourite armchair in the living room, opposite the machine.

He asked it to remove his love of Nadastra.

There was a small flash, a puff of vapour, the smell of chlorinated swimming pool water. Dr. Ek blinked.

Had the world changed? Not so he noticed.

Had his body altered? It didn't look like it. Only, when he searched his mind for the desperate, secret longing he found nothing. He was free of his love of Nadastra.

He felt a little liberated, then very liberated. Well, this was wonderful! He'd never have to give in to some stupid fantasy ever again, nor ruin a marriage.

He could *choose* to be in love, or *not* to be in love.



But a kind of melancholy came next. Free of his secret longing for Nadastra now, suddenly he longed for his wife again. She was a cosy certainty. She had been very loving and kind. Yes, he *had* loved her, in that safe and domestic way that seems so inbuilt for the raising and care of children.

(Four hundred years from now, the cognitophysicist Amelia Minsk would demonstrate that the brain was in fact capable of seven types of love, each distinct and with its own requirements.)

He powered the machine up again. He asked it to remove the longing for his wife. The machine understood the request.

Again there was a small flash, a puff of vapour, and the smell of swimming pool water.

The longing was gone and the melancholy with it. He felt entirely bland. It was a pleasant sensation, almost.

Or, it was the absence of negative sensations, which we can say is sort of a sensation.

What next? he wondered.

Well, he'd always thought of himself as a slacker.

He had the machine remove his tendency to procrastinate, which as gods in this story we are able to learn was hardly particular to Dr. Ek, but common to almost all sentient lifeforms in the galaxy.

A small flash, a puff of vapour, the smell of a swimming pool...

That was that.

He no longer had any tendency towards distraction. (Why not do the things you have to do and do them now?)

With his procrastination drive gone, there was only the will to work left.

And he worked all right.

He worked on his garden until it was a picture of bucolic perfection. He worked on his house until it was a shining example of domesticity. He worked on the dog, trimming her coat into a model of canine perfection.

He made the fish pond perfectly symmetrical.

He removed every stone, however small, from the garden path.

He wrote his friends' birthdays on the calendar. (Seriously.)

But Dr. Ek was a scientist and a scientist is really just a person trained to watch things very closely. He was watching himself very closely. He noticed a sharp change in his behaviour, all this working and no missing Nadastra.

Had Dr. Ek returned to the machine and reverted himself to his previous, default mental state (as was certainly possible), then Stara Lom would still be a shining jewel in the empire's crown today. (Or, hell, what's left of the empire.)

But no.

Rather than listen to his reservations, he went one better. He removed his reservations with the machine.

*Puff!* and they were gone.

Now there was nothing left; no doubt, no ethics.

And curiously, he found he was still not happy.

He thought the matter over rationally.

What desire could be implanted or removed that would promote contentment?

He took a walk in the forest. Through the trees he could clearly make out children playing in the schoolyard, pretending at being cavemen and cavewomen, not a damn care in the world.

Yes, he thought.

He returned to the machine.

He had it remove care.

He had it remove doubt.

He had it remove that infernal nub of striving-for-betterment that always sits so perniciously at the back of the adult psyche.

He was only a bag of intentions then.

He looked out the window and saw people were miserable, though they did not know why. Dr. Ek knew why. They had too many desires.

One morning a religious type came to his door called Maximilian, sporting a book of some kind. Dr. Ek listened without interrupting because he had long since removed the desire to interrupt.

Finally he said, "That's all very interesting Maximilian, but why did you come to have this conversation with me?"

"Because I'd like you to embrace The Word," Maximilian said.

"And until I do that, you won't be truly happy, is that right?"

Maximilian agreed heartily in that way one does with someone who is clearly quite mad.

Dr. Ek invited Maximilian in, had him sit down by The Want Machine and removed all desire in Maximilian to convert the village.

There was no discernible change.

“There,” Dr. Ek said. “How do you feel?”

“Fine, thank you.”

“You were telling me about your holy book?”

“Ah, we needn’t bother with that. I’ll be on my way if it’s all the same to you.”

But Dr. Ek was not finished. He removed from Maximilian the desire to know truth, to know beauty, to know himself.

Maximilian stared blankly, neither happy nor distraught.

What was left with all that gone?

The same thing that dwelt in Dr. Ek. The desire to remove desire.

They sat for many hours with the machine.

They killed lust. They killed ambition. They killed goodwill. They fired anger. They dispatched hope.

Yes, with all these hurdles dead, Dr. Ek would know true contentment soon. With desire gone, what was there beneath it all but total satisfaction?

But the longing for satisfaction is still a longing, Dr. Ek realised, and he had Maximilian remove that from the two of them also until they only sat and stared into space. Their minds worked fine. Sensations passed through them: the temperature of the room, the feeling of the chairs beneath their bottoms. But there was no inclination.

They stared at one another, mouths open. Their spit dripped. Their hands sat limply on their laps. The dog barked and barked but there was no desire in either of them to keep it alive.

The grandfather clock chimed the hours, twenty-four, forty-eight.

Maximilian had spent many years in a religious ministry of some kind, and deep in his brain a single hidden desire surfaced: the will to help others. That was the final want.

He felt no pain or dissatisfaction. He felt no grief or regret. This surely was happiness. He familiarised himself with the mechanism of the machine, then went out onto the street and approached a passer-by, a cyclist. He led her inside. He removed her ambitions, her fears, her struggles, her goodness. She no longer looked quietly sad.

He went out onto the street again. He brought a man in this time, the mayor. He removed from him the will to power and the need for approval from his constituents. Then he took everything else.

He implanted both of the newcomers with the desire to continue the Good Work. He implanted the desire to implant the desire in others to do the Good Work.

They went out onto the street. They began to bring the general public in for a go on the machine.

We have pieced this story together from forensic reports of Stara Lom as well as illegal visits by ribbondashing youths. Not much more can be said for sure besides the fact that as of 12,847 A.L. all communications from Stara Lom have ceased. Save for a cat and a chicken, the entire population was discovered to be expired, all seven million inhabitants.

No sign of struggle was detected in a single instance.

Nor dissatisfaction either.

## Water for Lunch

It was Saturday which was Boning Night, so they'd gone upstairs.

They got into the thing.

Adam was thinking about how much he didn't want to go to work tomorrow. He wondered what Jodie was thinking about.

She ran her hands through his hair. She bit his neck quite far past the point of teasing. She began to speak in a strange artificial accent.

"Where's that from?" Adam said.

She stopped. "What?"

"That voice you're talking in."

"Don't you like it?"

"No, it's fine, I just wondered."

"I'll stop it if you don't like it," she said.

"No, it's fine."

They continued.

He couldn't shake the thing out of his mind. Where was that accent from? It sounded off-planet. Orb Tyo? Orb Niastra?

She spoke again in the strange voice. She bit his neck.

Yes, he thought. I *know* that voice. It's Matella, that sex-technique woman from the streams. She always talks like that, high-pitched in that accent that isn't an accent.

He turned his attention back to Jodie. He could not unhear that Matella woman now. God, what a thing.

They concluded the whole dance the way they normally did and laid in silence for a while. Jodie said, "You were good."

"Thanks," Adam said.

"I was very good I think."

"Yes, you were."

She said, "What shall we do now?"

"Hm."

It had not always been like this. He recalled that for the first year neither of them would ever have asked such a question. Lying in bed would've been

quite enough for the evening.

Adam said, "Do you know that Matella woman?"

Jodie beamed. "Oh, Matella! She's so clever. What's that thing she says? Yes, live your dream. *Live your dream*. Isn't that clever?"

"Very clever, yes."

He worked hard at the factory the next week. He pressed out little concave plastic widgets, unsure what they would go on to be.

He noticed some of the men watching Matella on their pads during the lunch break.

He asked his pad to block any mention of her.

Adam and Jodie went out on Friday to the birthday of one of Jodie's friends. Adam was quite careful to avoid being in any of the photos and most of the evening was spent taking photos. He couldn't stand watching everyone's faces go from neutral to suddenly smiling the second the camera was raised, then back to neutral again. It made him feel unwell.

He went outside onto the restaurant balcony and requested a mood alteration. Nostalgia.

The new mood came on suddenly.

Yes.

Sink into the past.

The sunshine days in the fields with friends and apple juice and not much wanting or worrying.

The smell of something being cooked in the family kitchen.

Alba Lamm.

He pictured her only for a moment, her green eyes, her freckles.

He felt better.

Saturday rolled around again, Boning Night.

They got into the thing.

Jodie spoke again in the strange accent, in that voice like Matella, but this time it was constant. She said things she had never said before, more crass.

He considered requesting a mood change.

The door chimed.

"It's eleven. Eleven at night!" Jodie said.

"Let me get it." Adam put on his dressing gown and answered the door.

Two men were standing on the porch. One was very tall, the other short. Adam said, "Hello gentlemen."

“Can we come in?”

He let them into the kitchen. He said, “You want coffee or something?”

“No thanks.”

Jodie was peering from the bannister. Adam said, “I’ll be up in a minute, all right?” She disappeared. “Well, how can I help?”

The shorter man said, “We’re from the Office of Oversight.”

Adam said, “Okay.”

The shorter man said, “Would you mind telling us who Alba Lamm is?”

Adam kept his face neutral and didn’t speak a while. “I recognise the name from college, I think.”

The two men exchanged a glance. The taller one took out a little pad. On it was a brain reading and above the brain reading was Adam’s name. A small window was open at the bottom, a fragmented image and the image was clearly of Alba Lamm.

The shorter man said, “This image was isolated from your readings last night on several occasions.”

The taller man said, “On *several* occasions, Adam.”

“All right,” Adam said.

“Would you care to explain this?”

“Just an old remembrance. You know how it is. An old movie probably. Yes, an old movie reminded me of her. We watched it together, ten years ago maybe.”

The shorter man tapped the chemical readout box. “Is Alba Lamm important to you somehow?”

What’s the fucking obsession with Alba Lamm? he wanted to yell. But he knew, ironically, that thought would be recorded and the next day they’d be back at his door with more fucking questions, this time about violent fucking impulses.

“I’m afraid I don’t know how to answer, gentlemen,” Adam said politely. “Maybe there’s a problem with my band.”

The shorter man pulled a little hand device from his coat. He walked behind Adam and passed the device close to the back of his head. He said, “Everything looks fine with your band, but what do we know? If there’s a problem with it you should go for a check.”

“I should,” Adam agreed. “Thanks.”

The taller man passed a card across the table with a name and address. “In

that case you'll get it checked here at 9 o'clock tomorrow. Need to get the problem fixed."

The shorter man nodded, "Need to fix the problem."

"Righto then," Adam said.

The men let themselves out.

Adam stood for a long time in the kitchen. He tried to keep his mind blank and filled it up as a result.

He curled the pad with his brain reading up and hid it behind the shoe polish.

When he got back upstairs Jodie was sleeping with her mouth open.

The wallscreen was playing a video. It was Matella. Her face was ice white with makeup. Her lips were so red they looked bleeding. She was saying, "Treat him mean, keep him keen. Bail on a date. Bail on the next one. If he really wants you, he'll call again. Live your dream!"

From beneath the camera a man popped into focus. His hair was slicked to the side. His skin was perfect. He said, "Live your dream!"

*Live your dream!* appeared on the screen in sparkling glitter and span around and Matella and the plastic man danced.

The next shot was of Matella walking up a busy street. She began rating random members of the public's dresssenses on a scale of 1 to *So Not Hot*.

Adam turned off the wallscreen.

The next day he went to the address on the card. It was a government facility. He was given a ticket and stood in a queue for half an hour. Then his number was called and he went into a sterile, chromium room.

The technician asked him to lie down on the bed. He did so and she fitted a small wire frame to his head.

"So," she said. "What appears to be the problem?"

"Just a few strange thoughts, I guess."

She started up the wire frame. A few lights on it shone blue. "Ah," she said. "Invasive thoughts. Very common. Of what nature?"

He said, "Oh, you know, all sorts."

She examined a pad on the desk and said, "I have the Office of Oversight report here. Thoughts outside of marriage. That's quite natural. The crime isn't thinking them, it's hiding them. You know that of course. Get all the thoughts out all the time. Would you like me to correct the invasive thoughts for you?"



“I’m sure it’s just a problem with the band,” Adam said.

The technician glanced at him sceptically. “Well, would you like your band replaced then?”

He felt sick. He’d heard rumours about the procedure, surgeons going in through the back of the head. The band didn’t actually touch the brain, probably, but still it would have to be peeled off from the skull.

“No thanks,” Adam said.

“Well, if there isn’t a problem with the band, and you won’t have it exchanged, there’s not much more I can do.”

He sat up. “What happens now?”

“I’ll let the Office of Oversight know what the situation is. They’ll decide what to do next.”

She turned back to her pad, waiting for him to leave. He said, “I’m sorry, but what can it see?”

“What?”

He tried to sound as casual as possible. “What does the band really see? I mean, is it every passing thought or just the really big emotional stuff?”

She muttered, “The resolution is very high these days. Everything from internal dialogue to the deepest subconscious fantasies, I would imagine.” She smiled, eyes still on her pad. “Hey, they’ve just released the Fluffy beta. Twelve minutes of nothing but good cheer. And it’s free to try!”

“That sounds nice.”

Adam left the examination room. The queue was very long now. Tens of men and women were waiting on their feet, eyes shifting from side to side, biting their lips.

A suited man at reception shouted, “How are we all feeling today?”

Many of the waiting people shouted, “Great!”

The man began a chant and then attempted to coordinate a room-wide Mexican wave.

Adam caught the train.

A man was watching a video on his pad, the volume blaring. Adam recognised the voice immediately. It was Matella. “Water, water, water!” she was singing. “If you’re hungry, eat some water instead and those pounds will *fall off!*”

Adam looked out the window. The city was passing by very quickly, a set menu of concrete and metal and glass.

How does one eat water? he wondered. It's no more possible than drinking bravery or fucking time.

Imagine it, trying to eat water. You'd sit there with your knife and fork and go at the thing and every time you put the fork to your mouth there'd be nothing on it.

Where is my report now? The report about my brain. Is it with the Office of Oversight already? Who is reading it? What are they thinking? And if it is a person reading it, will someone read a report on what *that person* is thinking?

Work had given him two hours for the band-check appointment. That left him 40 minutes still free.

He got off the train at Mornington Station on a whim. He watched his feet to see where they would take him. They took him up and out of the station. They took him past the laboratories and crystal electronics factories. They took him to the fitting halls where babies went to get their bands implanted.

They took him to the city wall.

It was a clear day. The countryside was visible for miles below. It was brown and green and savage. It was completely unkempt.

And beyond all that, just a spire or a tower visible, was Gumption.

"Fine weather," said a policeman, approaching behind.

"Yup," Adam said.

"Look at all that green, too." The policeman produced his pad and took photos and ran them through filters. He showed a few of them to Adam. "What do you think?"

"The sepia one is very good."

"Yeah. I'm a great photographer. Everyone's always saying that."

"I'm sure, yes."

"Lots of people use my photos for their profiles."

"That's really good."

The policeman continued to stand beside him. Adam said, "I'm just admiring the view."

"Right you are," the policeman said. He nodded to Gumption. Smoke was billowing from something or other over there. "Fucking savages, burning wood!"

"Yup."

Still the policeman wouldn't leave. It occurred to Adam that this was

rumoured to be a prime suicide spot. He thought about assuring the policeman he had no intention of killing himself but that would be quite a strange thing to come out with.

Instead he said goodbye and crossed the street. When the policeman was gone he turned back to the view. He focused particularly on that smoke cloud, on Gumption. He knew why his legs had brought him here now, to this spot, to observe this thing. Alba Lamm lived in Gumption, among the savages, a savage herself. It had been that way for ages.

He dared not have the thought consciously for fear of another grilling by the Office of Oversight, but somewhere, beneath the minutia and daydreams, beneath the mechanisms of self-awareness, beneath even the automatic processes, he wondered what it was she was doing today. This hour. This second.

That evening was Dinner Night. Each couple was randomly assigned a Dinner Night every ten days and, if they wanted, also assigned a restaurant.

Jodie wore a very tasteful black dress. Adam wore a suit.

It was a nice restaurant. There were real waiters working there, part of the appeal of the place presumably.

Jodie spent a lot of the meal taking photographs of her steak. She ran the photos through some filters. "What do you think?"

Adam said, "Yes, it looks very good."

"What do you like about it?"

"I like the lighting."

"I'm always really good with the lighting. Do you know that I won lots of awards for photography in school?"

"Yes, you've told me a few times."

She showed him photos of the awards.

Dessert for both of them was a single, small chocolate on a plate covered with a dribble of sugary sauce. They were both given tiny knives and forks. Adam went to cut into the chocolate.

"Wait!" Jodie said. She took a photo from several angles. "Okay, now get down really close to it."

"What?"

"Get down really close to the plate and smile."

"I don't want to."

"Oh go on. Put your face really close to it. Then make a silly smile."

“No thank you.”

He went to put his fork in but she pushed his fork back. “Make a silly face,” she said. “Go on, a really silly one. Matella says—”

“Would you stop it?”

Her face went blank. “You have issues,” she said. “I’ve always said you have emotional issues. I can’t believe we matched. You’re rude and mean.”

“Let’s go home.”

“Now you’re being really mean.”

“I’m just tired.”

“You’re really awful when you’re like this.”

He tried to recall the standard advice for this sort of situation. Nothing came to mind. He was silent for a long time. A couple from the next table was clearly watching and pretending not to.

His pad vibrated. He took it out. It was a message from the janitor of their apartment building congratulating Adam and Jodie on taking such a nice photo of a dessert chocolate.

Adam said, “I’ll see you back home.”

He paid his half of the bill and left.

Chill out, he thought. Everyone gets annoyed. Chill out and just remember people have it much worse. Don’t be ungrateful now. Don’t be ungrateful for a house and a partner and a chocolate dessert. Your shoes are comfortable. Your health is exemplary. Don’t be ungrateful now.

Jodie caught up with him at the bus stop.

“Don’t be like that,” she said.

“Yeah, I’m sorry. I guess I just want to talk sometimes. Why are you always taking photos of things?”

“You’re really mean,” she said.

“Yes, I know.”

“Have you calmed down now?”

“Can we have a meal sometime when we don’t bring our pads?”

“Oh, so you’re still angry?”

People have it much worse, he thought. Don’t be ungrateful. A house, a partner. Dessert chocolates.

“No. I’ve calmed down,” he said.

She kissed him. He felt the heady rush of a repaired evening.

They went home together.

Adam laid in the dark for a long time, thinking and not thinking. Thinking in an indirect way in the fashion one knows the sun is there without having to look straight at the thing.

He went to work the next day, staring at the concrete passing on the train, his mind centred on nothing, or nothing much. He felt the band at the back of his mind like a leather strap, tightening. More commuters were watching Matella. Today she was giving another lecture on romance.

Adam heard that strange, made up accent say from a pad, “You deserve the best. You deserve *the best*.”

Why do I? Adam thought.

He worked the morning shift with his thoughts nowhere, dimpling the little plastic widgets, passing them onto the next conveyor belt. The work was just slightly too complicated for a machine, though not complicated enough for a qualified engineer.

He made a mood alteration request, for *Productive*. The request was granted and then he didn’t mind dimpling the plastic so much.

He ate lunch in the mall and returned to the factory for the afternoon shift.

A new foreman came down and put some music on and made everyone do a dance that involved wiggling their hips a lot to techno. The man filmed the whole thing and promised to tag the best dancers.

Adam worked some more.

The man on the machine in front was covertly watching something on a pad.

“Hey, what’s that?” Adam said.

The man checked for the foreman, then showed him. It was Matella, red-lipped, ice-pale. She was sat in a perfectly made up bedroom. She said, “If your partner tries to talk about something too serious, why not ask them about a recent sports game or plan a trip together?”

To the man Adam said, “You like this stuff?”

“She makes a lot of sense.”

“Yeah.”

He took a batch of the plastic dimples down to the cellar. He requested a session and they let him into the electromagnetic testing room. The technician inside was called Laura. She had a kind face, Adam had always thought.

“Usual procedure?” Laura said.

“Yes please.”

She sealed the door. She applied the equipment to the dimples, testing for radiation.

“How’s everything?” she said, relaxed now.

“Yeah, fine. You?”

“I’m okay.”

He left a suitable pause. Then he said, “The bands don’t work in here, do they?”

She glanced at him seriously. “No.”

Another pause. He said, “I don’t feel well.”

She didn’t look up from the dimples, just kept testing them.

Later, he could not explain why he said what he did. “I don’t want to get you in any trouble. You can ignore all this if you like. But you must be the only person who regularly gets time away from band monitoring. You spend hours in here every day. The bands don’t record, so they can only see what you stream. I think so anyway.”

She still didn’t say anything.

He continued, “Is there a way I could spend some time with myself? No monitoring. No watching. No photos.”

Laura said, “Are you working for the Office of Oversight, Adam? Because that’s just the kind of thing they’d say.”

“No,” he said.

“And how do I know that?”

He wanted to say something absolute, something that would prove everything. “I don’t know.”

She had a sudden tiredness about her. He noticed she wasn’t wearing any makeup. He spent a few seconds reacquainting himself with what actual skin looked like.

Finally she sighed. “Here’s what we’ll do,” she said. “I’ll be gone in a week. If you want I’ll tell you how to stop the band sometimes. But it’s dangerous for me. I can’t have you leaving this room and *thinking* about it, telling them what’s going on with your stupid thoughts. So you’re going to remove the conversation from your memory. You come back in a week and I’ll tell you all about it.”

“Where are you going?” Adam said.

“Out.”

“How will I know to come back if I don’t remember this conversation?”

“You always come down on Tuesday afternoons. I’ll still be here.”

“What if I don’t come? I won’t remember.”

“We’ll see, all right?”

She set up a shared workspace in their minds so she could watch him removing the memory, could check it was genuine. He went to remove it. Pausing, he said, “How come you keep all of this in your head? Don’t they read you too?”

“Sure, but I just think about something else. It’s a talent. Maybe you’ll learn.”

“I don’t feel well,” he said.

“I know.”

Boning Night came and went. As did Date Night. The next Thursday there was a group dinner for all the factory workers and everyone wore suits and dresses and looked nice. They snapped endless photos of their food. Many people found a corner and photographed themselves smiling widely and stood in thought for several minutes trying to come up with witty captions.

Later Adam was walking home when he noticed a young dog hiding beneath a car. He bent down. It had no name tag. It was not a pedigree but an unspecific mix of various breeds, championing none of them. Perhaps it was just one year old. Adam put his hand out and the dog licked it and licked it. He picked it up, bought some dog supplies from the pet store, and took it home.

“I have a surprise,” he said, entering the house.

Jodie said, “What is it?”

“You spend all that time on your pad looking at puppies. Well...”

She screamed with delight when she saw it. He put it down and fed it, then placed it very close to her. He said, “You can pet him if you like.”

“Just a second,” she said. She took a photo, then another, then another. She stared at her pad a long time.

“What are you doing?” Adam said.

“Lydia got a puppy last week. Everyone went crazy for it, a Labrador. Wait till they see *this!*”

“You can pet him if you like,” he said again. The dog stared up at her with enormous chocolate eyes.

“Just a second,” she said, playing with the filter software.

A few minutes passed.

He took the dog into the living room and sat with him in the dark and the dog fell asleep on his chest.

Tuesday afternoon. He had a full tray of plastic dimples. He went downstairs to the EM room. Laura was in there. She greeted him politely. She shut the door. She explained their last conversation, then played a recording to prove it was genuine.

He said, "Well, what now?"

She gave him a transparent clip. It looked exactly like a band diagnostic tool some of the health freaks used on themselves. She said, "This goes on the back of the head. It sets up a fake band profile. You can think about whatever you like while you're wearing it. They won't know. When you take it off, it will automatically erase any memories from the entire time you've been wearing it."

Adam said, "What's the point if I can't remember anything afterwards?"

She shrugged. "It's better than getting caught."

There was a silence. "Do I owe you for this?"

She shook her head.

"Well, you're taking a big risk. Can I give you *something* in return? Put in a good word with the foreman?"

"I told you last time, I'm leaving soon."

She scanned the dimples with a careful, detached poise.

"How will I remember what the thing is for if I keep forgetting?" Adam said.

She said, "That's easy. Small thoughts can be hidden. If you feel like thinking directly about the thing, jab yourself with a pin." She pulled one from her hair. "Keep this with you all the time. Whenever you start thinking about it, put the pin into your leg. It has to go deep, it has to hurt. That should keep it down. Don't ever, *ever* think about it directly."

"All right, thanks." Instinctively he said "You're going to Gumption, aren't you? You're breaking out."

"Maybe," she said.

"Why?"

She said, "Have fun with your new toy."

He felt like a child. And in the way children want to skip all the years of hardship and just *ingest* their parents' knowledge for free, he wanted to know what made her face so sad. But he also knew no amount of explaining would



communicate the thing, just as no amount of explaining will convey calculus to a toddler.

Laura said, "I'm going to tell you a secret now. A rather big one. I'll feel better if I tell it to you. But when it's out you're going to remove it from your memory."

"Is it about Gumption?" he said.

"Yes."

He found himself standing outside the EM chamber remembering very little.

He went back upstairs and worked until the early evening.

Walking home he saw a large crowd outside the exhibition centre. He spotted Jodie in it. He went over. "Hey. What's going on?"

"Oh, didn't I say? Matella's giving a talk tonight. It's about star signs."

"That sounds nice."

A very tall man with slicked hair and a ruffled shirt leaned over. "Jodie says you're a *Capricorn*," he said.

Adam stared at the man's beard. There was not a hair out of place. Adam said, "What's a Capricorn?"

Jodie and the man sniggered. She said, "This is Todd. He's from the office."

"Hi Todd."

The man declined the basic invitation to introduce each other and pulled out his pad and set it to one of those photo filters superimposing bunny faces in real-time. He took a photo of himself and Jodie. He took another. They made wide grins like they were at a theme park.

"Shall I meet you back home?" Jodie said.

"All right."

He walked the five blocks or so back to the house. The air was warm and pleasant and the streets were quiet.

He remembered the fake band in his pocket. He stabbed himself with the pin. He felt his leg go a little warm with blood.

Back at home the dog went insane and Adam sat on the floor with it for a long time rubbing its ears, letting the thing bound about and come back to him, never ceasing to be impressed with the world.

It occurred to him he had the house to himself for the first time since Matella's last visit to the capital city. He thought about inviting some friends

over, but could think of no one he'd particularly like to see.

He went out into the garden with the fake band in his pocket. He set up a deck chair. The dog jumped up on his lap and went to sleep. He petted its head a long time. He put the band on.

He looked up at the few visible stars. The light pollution was strong. Still, there was the Sagem cluster, that spot humans allegedly came from originally; the little blue-green planet nesting somewhere amid the black.

And there was the seat of the empire too, invisible though still majestic somehow; the Marquis of the empire perhaps even now dispatching war fleets, making trade deals, shouting at assistants.

Adam knew they did not use bands on any other world. That was a fad native to his own. It was rumoured even that they were illegal elsewhere.

The fake band was too tight, but he felt an enormous release all the same. He let his mind wander in that way explicitly advised against from the first day of school. He thought about Jodie. He thought about the photos. He thought about the stupid putz with the long legs and the great beard and the arcane knowledge of Capricorns, whatever a fucking Capricorn was. He thought about the men from the Office of Oversight. He thought about the city wall. He thought about Alba Lamm.

She had been among the last to legally leave the city for Gumption, just as the penalties were coming into effect. That must have been fifteen years ago. He doubted she would even recognise him. But he knew he would recognise her.

They had not been lovers. They had barely been friends. Perhaps their entire period of acquaintance consisted of only four separate conversations.

The first time he saw her had been in the university cafeteria. She was sitting alone and fiddling with the back of her head. He said, "You all right?"

"I think my band is loose," she said.

"How is that possible?"

She ran thin fingers along her scalp. "It's like I can feel it in there. It's like it's poking out."

He shrugged and went off to class.

He saw her the next week. She wasn't fiddling with the back of her head. He said, "How's the band?"

"I got it taken out," she said and ate some beans.

"What?"

“Oh, it was driving me crazy. Stupid thing, I never asked my fucking folks to put it in when I was a baby, did I?”

She had a lightness to her face now. He wanted to end the conversation but couldn't. He said, “What does it feel like?”

“What does what feel like?”

“Not having a band, I mean.”

She shrugged. “The same. Only, I can't make myself happy if I'm not and no one's snooping on my thoughts. So that's nice.”

“What if you get sad?” he said.

“What if I do?”

“Well what will you do about it?”

She looked at him blankly. “Then I'll be sad,” she said.

Back then it was possible to turn one's band off. She pressured him a little to try it and he did. They blew off class and took a walk around the university. She led them to a field by the Narrative Dynamics building and they laid down in the grass.

She said, “It's funny, I used to come out here a lot to look at the clouds. It's nice to watch them. One day I started getting all these ads on my pad for camera lenses that take great photos of the sky. Isn't that gross?”

Adam said, “Bands don't work like that...”

She stared like he was an idiot. “Have you been living under a rock? Of course they work like that. Why do you think there's a whole department of government logging all our fucking daydreams?”

“I don't buy into the propaganda,” he said, feeling clever.

She rolled her eyes. She said, “Some friends are thinking about going to Gumption.”

“That's a daft idea.”

“Why?”

“Well, what's there to do in *Gumption*?”

He had learned not to think about Gumption. Even back then it was heavily frowned upon. But for that hour, without his band powered, he allowed his mind to wander.

There were the stories of course, of orgiastic savagery, of ritual murder, of wild excess. Every year a few twenty-somethings broke away to go live there. They never came back. Or, perhaps they tried and were not let in. Either way that was fine.

Adam said, "My mum says Gumption is full of savages."

Alba snorted. "Did you know Gumption was here first?"

"Bullshit."

"Sure isn't. When the first colonists came they set up Gumption. Like, maybe two centuries ago. That was the first city on the planet."

Adam said again, "*Bullshit.*"

"Well whatever."

She lit up something that looked like drugs. She passed it to him. "What is it?" he said.

"Good for you."

He tried it. It tasted a bit like honey. "What is it?" he said again.

"Off-world stuff, from Aerth."

He began to feel good. He smoked some more. He passed it back. She finished it.

The sky took on a luminous quality. The clouds dribbled by, each drop of water vapour knowing exactly where it was bound for.

He got out his pad.

"What are you doing?" Alba said.

"Taking a photo. The sky looks lovely."

"A photo for who?"

"I don't know, for me. To remember."

"People who spend all their time taking photos will just remember taking photos. Souvenirs only make you think of buying them, don't they."

He put the pad down.

They went back to class, not talking.

He asked around about Gumption. His generation repeated the same stories of the city that he already knew. The older folks backed up a few of Alba's claims. Most just looked at him suspiciously though.

The last time he saw Alba Lamm she was lying against a tree in the university courtyard. He went and laid down beside her.

He said, "When are you going?"

"Tomorrow."

"Why are you telling me the truth?"

She snorted. "What are you going to do about it?"

She covertly began to smoke one of her laced cigarettes. She offered him some but he declined. He said, "What do you think Gumption is like?"

She shrugged. "Don't know. I'll tell you what it isn't like. This. All of this. They don't give a shit about posing. They don't even have pads, most of them. They live how we used to."

There was a long gap. He wanted to fill the gap by saying, *How did we used to live?* but thought better of this. She picked up on it anyway.

"They *talk* there. They don't have two personalities, one for the house and one for the world. They're actual."

"The old folks said it's savage there, that they don't even have decent comms."

"So what. Better to live as a free animal than a caged woman."

He thought she was stupid. He thought she was clever. It is always like this with idealists. One scorns their passion, all the while secretly admiring their passion.

"I hope you like it," Adam said.

And she took his hand, just for a moment, and gave it the smallest of squeezes, then drew her hand back.

The first executions came soon after. 'Deserters', they were called.

They were strung up in the city square and injected with a black formula of some kind. The event was streamed across the city, and apparently broadcasted to Gumption too, to make the point. People mostly stopped leaving after that.

But Alba Lamm was already gone.

Now sat in the garden with the dog on his lap, he wondered what Alba Lamm was doing that moment. Most of all really he just wondered if she was alive. And if she was alive, if she was happy.

There was a crash from the house.

Jodie appeared at the back door. She called out his name.

"I'm here," he said.

The dog went running to her. She ignored it. Behind her, the man with the perfect beard appeared. "I brought Todd home for a bit."

The dog rubbed its side against Todd's trousers. He firmly pushed it away with his foot.

"Have fun then," Adam said.

"It's Free Night tonight, so..."

"Yes, I know."

"If you want to bring someone home, you can."

“I don’t feel like it. Goodnight.”

They went inside. He heard giggling and kissing from the bedroom. Todd leant out and closed the window.

The curtains lit up occasionally with camera flashes.

Friday. He set his mood to productive and dimpled the widgets and stabbed himself with the pin when he felt the forbidden thought coming. At lunchtime the foreman came to him with another man, taller and shrewd-eyed.

The foreman said, “Adam, this is one of our friends from the Office of Oversight.” Adam shook his hand. “He’d like to ask you a few questions.”

Adam’s heart began to palpate. “Hello.”

The man looked Adam over, very quickly, foot to head. He said, “You were acquainted with Laura Arendt, the EM technician?”

Adam stabbed himself in the leg with the pin. “I saw her occasionally, yes.”

“You’re aware she has departed?”

“I haven’t seen her around in the last few days, no.”

“Mm...” the man said and looked him up and down again. “Did she mention anything to you about her plans to leave the company?”

“Not that I recall.”

The man stared a while. Legend had it that some of the higher Oversight members received band streams directly into their heads, a kind of awful telepathy.

He pressed the pin in further. He sweated.

“Would you consent to a deep probe?”

“What is that, sir?” Adam said.

“You’ll be taken to a very sophisticated government facility in the centre. Everyone’s pleasant. They will perform a small outpatient procedure, making a complete digital backup of your brain’s connectome. This will be analysed for any anomalies.”

Adam tried to smile politely. “What kind of anomalies?”

“Well, perhaps you contain a memory of Miss Arendt that at the time seemed entirely innocent, but on closer inspection will reveal something of her criminal motives.”

He tried to think and not think. To panic and not panic. “That sounds fine,” his mouth said.

“Excellent,” said the man and did not smile. “I’ll arrange it with the

foreman here.”

They both took their leave and moved to the back of the factory.

Adam kept his thoughts on dimpling the widgets. His legs were shaking and he attempted to overlook it. He wanted to shit.

He went to the toilet. He put on the fake band. Safe now, he rested his head against the cubicle door and screwed his eyes closed.

Run.

No. Not that.

Carry on.

Oh fuck, what then?

Run.

No. Not that.

He took a notebook and pen from his pocket. He wrote: “STAY CALM.” He did not recognise his own handwriting, such had been the fifteen years since using it.

He put the paper in his pocket and felt somewhat like he’d done a thing.

He sat back on the toilet and tried to think of nothing. There was a humming from somewhere, perhaps a generator. There was the smell of disinfectant. In here the world had an immutable sterility to it.

I should like to shit outside from time to time, Adam thought. He took out the piece of paper again and wrote: “SHIT OUTSIDE OCCASIONALLY.” He put it back in his pocket.

He thought a little of Alba Lamm, then Laura Arendt. He took the band off.

He looked down at the fake band, confused, remembering nothing beyond entering the cubicle.

He exited the toilet and went back to work, worrying still.

Walking home that evening he noticed another Matella conference gathered in the main square. Nearing, he saw it was not a Matella conference at all, but a justice ceremony for that week's deserters. They were strung up in a line atop a wooden podium, seven of them, four men, three women. One was Laura Arendt.

He pushed through the crowd to the front. Everyone was quiet. Their faces appeared impartial.

A man in a black robe was giving a long, droning speech about the importance of solidarity.

A few of the deserters were crying, but Laura Arendt wasn't. She had her eyes fixed calmly ahead, expression neutral. He tried to catch her eye.

The man finished his speech and gestured to someone off-stage. A technician climbed the podium and produced a vial of black liquid. Ignoring the screaming from the first deserter she injected him and he cried out to his mother, then went still. She injected the second man and he didn't cry out. She moved to Laura Arendt. Laura Arendt took the needle without flinching and sighed. She looked about at the crowd. Her gaze stopped on Adam. She stared a moment. Then she closed her eyes.

Adam came home to the smell of cooking. Jodie was in the kitchen and called out hello. Adam entered and found Todd at the table.

"Hi," Adam said.

Todd said nothing.

Jodie said, "Lasagne. Does that sound nice?"

Adam said, "Yes, that sounds nice." He stood there a while saying nothing.

"Oh, I invited Todd over for dinner too. You don't mind, do you?"

"No."

"You can have someone over if you want?"

"All right."

He downloaded a quickmeet app. He matched fairly quickly with a girl called Lyra. He mentioned there would be a dinner party and she could come over if she wanted. She accepted.

Adam sat in the living room, the dog asleep on his leg. The doorbell rang. Lyra looked presentable enough, in that cosmopolitan well-raised way. They shook hands. He invited her in.

They sat on the sofa and talked a while. She took a few photos of the dog. She volunteered her life story. It was not unusual: a stuckness, an uncertainty, trapped in that nether corridor between adolescence and some pipe dream of "real life" that one seems to find themselves in during their twenties.

There was a squeal from the kitchen and Todd and Jodie danced past, twirling.

"Who's that?" Lyra said.

"My wife."

"Oh, neat!"

Lyra went in and introduced herself. She did not come back out. Adam sat and listened to them laughing and shrieking for a while.



They sat around the dinner table then. Jodie mounted her pad on a little steadydrone and insisted on taking a group photo from seven angles. She said sagely, “Matella says seven angles is the very minimum.”

“How true,” Lyra said.

Jodie put on a track Adam didn’t know, some old flashblitz number. They ate without talking for a while, the music deafening.

Then Todd said flatly, “What do you do.”

No one said anything. He looked up at Adam. “I’m talking to you.”

“What do I do?”

“That’s what I said.”

“I work in the Technical District.”

“Like, a grunt?”

Adam took a large swig of beer. “Yes.”

Silence. Adam said, “What do you do?”

“I work for Metronomy. It’s an experimental online art magazine exploring themes of corporeality and empirical liberation. I can’t imagine you’ve heard of it.”

“I’ve heard of it.”

“Maybe look it up some time.” Todd twinned his pad with the wall. Nine foot high images appeared of him alongside smiling people, some of them Adam recognised as online personalities. Todd said, “This is me with Jim Wattock. And Annie Smatter. And Mistress Carlie. And John Ribgobble.” The next photo was of him and Jodie, both of them naked from the waist up. Jodie and Lyra giggled. Todd said, “Oops, that one got astray!” He continued to scroll through the pictures.

Lyra said, “You know, I was in the same bar as Annie Smatter once. Or, she left just before we arrived but someone *swore* she was in there. Imagine it! Annie Smatter. Meeting Annie Smatter.”

Adam said, “Isn’t that the woman who sells her used tissues?”

There was a long pause. Todd did not look up from his plate and said, “It is called Aesthetic Biological Recycling and Annie Smatter is a genius.”

“I could do that. I had a cold just last week. I should’ve boxed them all up, not thrown them down the toilet.”

“Adam...” Jodie said. “He’s so silly sometimes. I’m sorry he’s so silly.”

Todd put up more images on the wall, this time of tissues, crumpled in various configurations. He said, “This one is my favourite. It’s called

Rococo. It signifies both the internal torment of the artist, as well as her groundbreaking positive outlook.”

“That’s fascinating,” Lyra said.

“And this one is called Ephemeral Intangible Phenomena. It is a beacon of hope for all who are looking for solace. Notice the highly intentional frenetic folding on the left to signify the folds within us all.”

Lyra took a picture of the picture and showed it to Jodie. Jodie nodded in approval.

Adam took out his cigarettes, checked his pocket for his lighter.

“Oh darling, please don’t,” Jodie said.

In his pocket he found not his lighter, but a piece of paper. It read: STAY CALM and SHIT OUTSIDE OCCASIONALLY.

Laura Arendt had sent him a message. Perhaps she’d even given it to him while he was wearing the fake band that day in the EM room.

Beneath the table he pushed the pin into his leg.

But he could not help think of Laura Arendt, could not help think of her sad face.

Lyra and Jodie and Todd crowded in front of the picture of the crumpled tissue. Jodie said, “Take a photo of us, Adam.” They all smiled, their eyebrows unraised, the skin around their eyes unraised.

Todd said, “Come on, show us some of that technical know-how. You spend all day pressing buttons anyway, don’t you?”

Adam took Jodie’s pad and pointed it. He made several shots. He made several more.

He launched the pad through the window, smashing the glass as it went.

Everyone was very quiet.

He located his lighter in his trouser pocket and lit his cigarette. He said, “I don’t think taking photos of crumpled tissues is very clever. I don’t think taking photos of yourself with minor celebrities makes you an interesting person. I don’t want to look at more photos of crumpled tissues or minor celebrities. Maybe I’m uncultured. I spend all day pushing buttons after all. But something has gone awful, awful wrong. Pictures just remind you of taking them. I’m really not interested in seeing more, thank you, not of minor celebrities, not of used tissues. So I’d like to invite you to go home now. Go home to your collection of photos of candy wrappers with three-page explanations about the existential plight of the artist. Go home to your no

doubt immaculate apartment and spotless mirrors.” He picked up his chair and launched that through the now open window.

Todd shrieked.

Adam turned to him. “I do not want to take any more photos. I don’t like photos. I don’t want to remember any of this horseshit. What the fuck are we doing with all this? Trying to make celebrities of ourselves, everyone screaming down everyone’s throat and no one stopping to shut up. *I don’t like photos*. I don’t want any more taken of me.” He grabbed Todd’s pad and launched that through the window. Todd squeaked.

“Go home and write me, tell me how it was, leave a review. Go home, you bunch of absolute, absolute oxygen thieves.”

Lyra and Todd exited quickly. Jodie stood by the dormant wallscreen, hand over her mouth, eyes on the floor. “Oh,” she said. “Oh...”

“Someone died today,” Adam said. “I watched someone die today. Right there in the square. I watched them injecting her with something and then she died. What is all this?”

Jodie remained still a while, then went into the kitchen and fetched another pad. She pointed it at the mess, at the broken window.

“What are you doing?” Adam said.

The pseudo-shutter sound of the photo app clicked again and again.

Adam took the fake band from his pocket and put it on.

The sense of time passing.

The fake band was in his hand again. He was outside. The air was cool and fresh. The sky was clear. He was on a ledge of some kind; yes, that spot near Mornington Station, his favourite place to view Gumption.

“Now just come back in,” someone said. “Come back in slowly, Adam.”

He turned about. Several security men were reaching their hands for him. One said, “Come back in now, Adam. It’s all right.”

“What?” Adam whispered.

“You really don’t have to do this.”

There was a crowd gathered on the street behind.

“What?” Adam said again.

A policeman said, “I’ve spoken with the Office of Oversight myself. They say everything’s fine. There might be a bit of a small penalty for that violent outburst, but the rest is going to be fine. So come back in now, all right?”

He reached into his pocket. He pulled out a small sheet of paper. On it was

written: DON'T LISTEN TO THEM. JUMP.

He turned ahead again. Below was the wilderness. Beyond that was Gumption, its distant chimneys billowing wood smoke.

The fall was at least three hundred feet.

Adam said, "What the hell is going on? Am I in trouble?"

The security man said, "Yes Adam, but it's nothing we can't fix."

He thought of Laura Arendt. He thought of the syringe and the blackness inside the syringe.

God, he thought. What's better, nothing for lunch, or water? At least with nothing you know you're starving. They give you water though and what's the point?

"Adam," the security man said.

He stepped off of the ledge.

He was as a no-thing for the fall.

He felt the wind in his face, yes.

He felt the acceleration, yes.

There was a letting go.

He was sitting upright in a chair. Perhaps ten others were sat around him. A woman at the front was intoning in a sombre voice about something. He started up, but a man next to him put a gentle hand on his shoulder and sat him back down. "Just a moment," the man said.

The woman was reading from a large, elegantly bound book. "...that he should so choose to take his own life in such a fashion. We commit his carbon to the firmament."

She closed the book and set it on what Adam now saw to be a coffin. She doused the coffin in a clear fluid from a canister. She struck a match and up the coffin and the book went.

Someone raised Adam to his feet and said, "Come along then," and led him over to the coffin. He looked inside. The face was clearly his own, though bruised and bloody. The face was shot through with paraffin flames.

"What..." he said.

The funeral party watched the body and the coffin burning and there was nothing for Adam to do but watch it too, the thing converting from form into dust, the wood and the flesh and the velvet. Soon the struts collapsed under the coffin, and the woman poured more paraffin on the thing and the flames

went up so high and thick that it was only flames then.

The flames died down. Ash.

Wine was served and Adam was given a glass. The funeral party stood and gently lured Adam away from the chairs and the remains and into the desert beside them. Someone patted him on the back.

The faces were not old but not young. Many appeared worn. The clothes were inexpensive, some closer to rags. The woman who had been reading the funeral rites came to him and said, "Well then, it's done. Are you all right?" Adam could only stare. She said, "We find it's best, psychologically speaking, to begin with the end. There was your end then."

In the distance he spied a high cliff. Atop the cliff was a glistening citadel of steel and chrome and industry: his city.

He said, "Is this Gumption?"

"Yes," the woman said.

He turned back to the chairs and saw that, like the folk here, they were higgledy assemblies of random parts. So too was the shanty town nearby, planks and girders.

The woman said, "We took the liberty of remaking you. We're plugged into enough of the city's streams to steal band data. We think we got enough of yours to reconstruct your memories and such. Do you feel yourself?"

"I think so."

"The body is easy to recreate. The mind not so much. If you feel a little off, let us know. We can tweak most things."

He glanced about the crowd. There was Laura Arendt watching him with a smile. She nodded. He nodded back. "What is this place?" he said.

"Gumption, silly," the woman said.

"Am I dead?"

"You were, certainly. It's very difficult getting out alive, you see. Everyone got here by doing themselves in or being done in. If you like, consider this the afterlife. The rules are quite simple. No going back to the city and no reproductions."

"Reproductions?"

"No exploiting the moment, no photos, no videos, no recording brain streams. No bands."

"I think I can manage that."

She slapped him on the back. "Excellent."

The party was quiet. They all drank their wine. The woman said, "It's going to take a few days to get used to your new skin. We're using a stolen topology caster. It's old but it does the trick. If you want to leave, you can. There's a spaceport a few miles away, can take you straight to the empire. Or stay here, that's fine too."

"What do you all do?" Adam said.

"Whatever we like, really. Long as it doesn't harm anyone." She called out behind. "Martin, would you?" And a man came then with a dog, with Adam's dog, and gave the lead to Adam. The woman said, "They even give animals bands these days. He wasn't so difficult to reconstruct." The dog licked at Adam and he rubbed the animal's ears.

The woman said, "I know I said no reproductions, but we make an exception for living things. If the city isn't using them, that's fine. The city wasn't using you anymore. So what the hell?"

He looked about again. It was not squalor here, but it certainly wasn't opulence either. Beer cans and old plates and rags were lying around all about the place. Dead campfires were smouldering.

He thought of Jodie. He wondered if she was thinking of him.

On the other side of the party he spied Alba Lamm.

"I'm so confused," he said.

The sun was beginning to set, turning the city and the cliff and the desert a smoggy pink. And here came the moons, riding faithfully behind, ready to rule the night for a while.

He said, "Do I still have a band?"

The woman chuckled. "Of course not."

"No one's reading me?"

"No one's reading you."

"All right. I think I want to paint. I can't, but I want to try."

"That's fine, we have lots of paint and lots of painters to teach you. Or if you want to write we have writers. And dancers and musicians and astronomers and thinkers and carpenters."

He looked back to the city.

Now, what will I be?

He picked the dog up and it went pliant in his arms and watched him like a baby.

"All right," he said. "All right."

## **The Girl and the Pit**

Ushko was the leading astroarcheologist for several million light-years. He had been educated on Yeshua, done his initial training on Ek, and even been allowed to visit the dying Sol system for a few weeks. His groundbreaking work was an academic piece called: “Exotics and Natives: How to differentiate between extraterr remains and altered human remains.”

While simple, the idea had catapulted Ushko to the status of galactic celebrity. He was invited to take positions at numerous universities and offered countless hands in marriage. He politely declined on both counts.

Instead he used his newfound influence to secure passage to the planet Katarsina.

Ushko had a complex relationship with Katarsina. It was rumoured to be the birthplace of the protos, the oldest known extraterr race. They were extinct now of course, all extraterr civilisations were. The one thing all the dead extraterrs had in common, however, was that their literature spoke of the protos, revered them.

If both a loser and a victor agree on a thing, we can suppose it was the case. All accounts suggested that the protos were a wise and powerful civilisation, that they had mastered technology far in advance of anything else the galaxy was capable of. Then quite suddenly they had vanished, leaving only ruins behind. And not many.

Katarsina, it was said, was where the Foundational Arts were perfected—that is, the true sciences, those derived from the ground up, from hard logic and demiform: a system of notation even more powerful than mathematics.

Still, the protos went to bed.

Later, millions of years later in fact, the other civilisations would go the same way. Man would evolve a little after that and turn his gaze outwards to find himself in a derelict galaxy.

Ushko's parents had been archaeologists, and while they didn't necessarily intend the same occupation for their boy, they certainly weren't disappointed when he began to show interest in the field at an early age. He accompanied them on expeditions, fetched their tools, watched as great extraterr

monuments were uncovered from sand and dirt.

One morning on New Pleven his mother unearthed a gigantic fin of unfamiliar metal. It shone blue in the sun and if struck with a chisel rang for minutes. By the end of the day his parents were certain it was the stabiliser of a proto craft.

Back at camp that night Ushko waited until the fire was lit and dinner was over, then asked his parents who exactly the protos were.

His parents exchanged a glance, then fixed the compass needle of Ushko's life. They told him everything.

Back in his tent Ushko saw a wondrous scene before him, of great shining blue pyramids, of enormous spheres in orbit, of a culture that had solved nature's conundrums and learned to live in harmony with their biology and environment.

Then all of it was promptly snuffed to nothing.

Where had the protos gone and had they gone there by choice? If not, what could kill off the most advanced civilisation the galaxy had ever known?

Ushko continued travelling with his parents until his eighteenth year when he inevitably undertook his degree in extraterr archaeology.

Two years later while on a caving expedition, his father contracted some kind of fungal flu and died. Ushko's mother took the death gracefully but hung up her slacks and returned to Yeshua to live quietly by the family orchard and wait until her time came too.

Ushko visited her occasionally in between expeditions, but interstell travel is as dangerous as it is costly. Go about in the heavens, his mother told him, and don't think of me so often.

And once he graduated he did so; planet to planet, site to site, he scoured the old archaeological testing grounds, Ek, Ruthia, Sand Folly, never staying too long, never committing.

Every year he submitted a proposal to the Katarsinian Embassy to set up digs on the planet; the original home of the proto civilisation. Every year he was rejected. Every year the reason for the rejection was new. At first it was a lack of experience. Then as his reputation improved it became a lack of openings. Then a shortage of funding. Then simply a polite refusal.

So when his now-famous paper pushed him into the galactic limelight, he wrote once again to the embassy. If the offer was refused this time, he said, he would take the matter to the Marquis himself.



Several weeks elapsed, then the reply came that he would be allowed a Standard Year on the planet, but with a long list of stipulations, including but not limited to: total confidentiality, no ownership of finds, and absolute adherence to the wishes of the Katarsinian government.

They could have demanded that Ushko be naked at all times and smear himself in jam and yes would still be the answer.

He signed off on the current dig, packed his few possessions into a travelling sack, and boarded the voidskipper.

From above, Katarsina really wasn't much to look at, a slight sulphuric yellow tint to the atmosphere perhaps. The ferry dropped him in Amalga Town, the capital, and officials met him in the arrivals lounge. From Amalga Town it was a three-hour train ride to his allocated dig site, a small farm town. There it was beyond the train window: Katarsina. Rice paddies smeared by; lakes, tributaries, villages. It looked little different to Ek or Yeshua. But below those rice paddies and lakes and tributaries and villages, Ushko knew, was a mystery in plain sight. The secrets of the proto civilisation slept quietly in ruin and all it would take to discover them was a trowel and a steady hand.

He arrived in the village of Inica, a small gathering of circular canvas-like structures. There was little bad weather on Katarsina and homes appeared designed to tolerate small storms and not much else.

A local met Ushko at the station exit, a short man called Matthew who spoke Galactic Standard with an accent so thick it was practically pidgin. He showed Ushko around the village—an exercise that took nothing upwards of forty minutes. He explained that Ushko would be sleeping in a structure on the outskirts owned by the government, and would he like to join Matthew and his wife for dinner? Ushko was desperate to get set up but knew the importance of keeping the locals happy when one was intending to dig up their ground.

Matthew's tent was sparsely decorated; an aesthetic Ushko suspected was commonplace on Katarsina. His wife was already busy making something on an electric stove and she embraced Ushko when he entered as one might an old friend.

“Well met,” she said. “I am Marla.”

“Well met,” Ushko said, a greeting that had not been used in Galactic Standard for perhaps four hundred years.

They ate a meal of soup, then some kind of spiced animal, then Matthew prepared a fire at the centre of the tent and rolled down the roof so they might see the stars. There was no obligation to talk, Ushko noticed. What a blessing.

An archaeologist was exposed to more cultures than most. Some traditions were steeped in politeness and folk would talk for hours only to prove that they were good people. Others were more interested in communication, and anyone who had thought the matter over for more than a minute knew that conversation and communication have very little to do with each other. In any case, what with the long journey and the stress of voidskipping, Ushko was glad of the silence.

They drank some kind of Katarsinian whisky. Ushko watched Marla across the fire. She was beautiful in a way he hadn't seen before, pale and knowing. Matthew had the same complexion, though with handsome edges thrown in.

Finally Marla said, "What are you wanting with Katarsina, Ushko?"

On most planets this would've been considered an exceptionally rude question, but Ushko liked the directness. "Katarsina is very famous among archaeologists," he said. "I have wanted to come here for decades."

"Because of the old extraterrrs?"

"That's right, yes."

"Why?" Matthew said.

Now, how to explain this? Ushko chose his words carefully so as to avoid a scandal later on. "Many believe archaeology tells us something about our future." Matthew and Marla stared inquisitively. "You see, we don't know much about any of the extraterr civilisations. All we can be sure of is that they faded away eventually and most of the time it wasn't through war."

"Maybe they got bored," Matthew said.

"Maybe," Ushko agreed. "We have no idea yet because the last thing a society cares about as it's dying is telling the future why it's dying." The whisky was working its magic properly on Ushko now and while he knew he was ranting he also didn't much care. "Now, human society has its own problems. We're present on thousands of worlds, but things are not going well. Forgive me, I don't know how closely you follow galactic politics."

Marla and Matthew smiled a little sardonically and the smile said, *We don't follow it at all.*

"Well," Ushko continued, "the galaxy is beginning to fray at the edges."

He remembered their weak grasp of Galactic Standard. “*Fall apart*, pardon me. Just a little, but it's there. It's no secret that there's a crisis inside Governance. Planets are already breaking away from the union, eight of them last Standard Year. More will follow, I think. Trade routes are wearing thin. War is being used as a threat for the first time in five thousand years. War!”

“War,” Matthew murmured as though the word was ancient and unused.

“But we are not extraterrrs,” Marla said. “What does it matter?”

Ushko constructed the argument in his mind, checked it worked. Yes it was fine. “No, we are not extraterrrs from our perspective. But I believe all civilisations face the same pressures, extraterr or not. It doesn't matter how many limbs you have or how your science works, war is still war, famine is still famine. There may be a...common structure to the way civilisations develop in the galaxy and there may be a common structure to what destroys them, you see? To answer your question, that is what I'm doing here. Your planet was probably the home of the protos, of the first galactic race. We know they were also the smartest and the wisest and the first to fall into extinction. If we can solve the mystery of their demise, pardon me—of their *death*, then I believe we have a chance of saving our own empire.”

Matthew and Marla exchanged a bemused glance. They were good folk, Ushko decided, and they shared a suspicion of lofty ideas as most galactic citizens did these days.

“I think empires are just people,” Matthew said. “Not more.”

“You're right, Matthew.”

That was the end of the thing and Marla refilled their glasses and they watched the fire and the stars for an hour or so in silence before Ushko went to bed.

In the morning he was hungover enough for it to hurt. Marla and Matthew were already out in their rice paddy and he waved to them and they waved warmly back and continued on with their hoes. Thousands of years of separate planet living had been enough to naturally deviate the human genetic baseline. Some planets sported very tall humans, others very small, and a rare few had even managed to develop a tolerance for hangovers. Watching Matthew and Marla go about their morning with no obvious misery, Ushko was quite certain this planet had perfected the hangover tolerance and he was jealous.

He had a small hand-drawn map the Katarsinian government had given

him and he followed it out beyond the rice paddies and over a stream to a plot of land several acres across. He may dig anywhere he liked on this spot provided he replaced the dirt when he was finished. With most dig requests Ushko was allowed to make suggestions about where he was allowed to work, but the rarity of the offer to come to Katarsina was so striking he hadn't tempted fate by making demands. He was on the planet now and there were no prying eyes and he had a year and he would not ruin it with pickiness.

Besides, he knew this area had been prey to earthquakes in the past, and had probably thrown up a great deal of deeply buried artifacts to a shallow level.

On the corner of the field he set up a small helper factory. By early afternoon it had produced two helpers, silver orbs that sat noiselessly in the air and regarded Ushko with blue mechanical eyes. (They were not sentient of course, that would be in direct violation of the Artie Treaty.) Politely he asked them to echoping the ground and pinpoint any metal or stone structures, then to use that as a centre from which to base the dig. While they sauntered about the field he had the factory spit out two more helpers, larger this time and groundbound, with great metal tusks and shovel-like implements for mouths. They clambered out into the sunshine and when the little spheres were done with their planning, the mechanical dogs began to dig with perfect regularity. He called one of the spheres back to him and told it, "You will oversee the operation. Let nothing be damaged in the digging process. If it is, you will answer to me. Do you understand?" The blue eye blinked affirmatively and the sphere rejoined its siblings at the pit. Ushko set up his hammock on the outskirts of the dig site beneath two trees, the species of which appeared to be native Katarsinian. He took a volume of Katarsinian history with him up into the hammock and read into the afternoon.

Katarsina was a thoroughly dull planet in terms of history, it seemed. There had been no major wars or uprisings in its ten thousand years of human occupation. They had discovered nothing and invented little. The dominant mode of life was known as *Kala*, the principle of non-interference. Meekness as a virtue. Well, Ushko thought, what's so wrong about that?

Excitement had kept him in a kind of half-woken state the night before and he hadn't rested. Now in the sunshine and with the helpers working away, he closed his eyes a moment and was gone.

His dreams were absurd at first, shapes and faces, no plot to any of it.

Then he saw a pyramid. It shone blue in the sun and he knew if he struck it the whole structure would ring out like a gong for hours. On closer inspection he saw that the pyramid was etched with glyphs and to his surprise he found he could read them. The glyphs were to be read right to left and the end of the sentence was expressed in the first character already so one could tell the context without yet knowing the content. One line spoke of the length of the days on Katarsina. Another seemed to be talking of the weight of the chemical elements. On the other side of the pyramid there was no scientific data, but endless paragraphs of what appeared to be philosophical platitudes:

IN THE START, SO THE FINISH

Or THE TRUE QUEST IS IN THE CONCLUSION OF ALL QUESTS

Or KNOWING THE LIMIT OF KNOWLEDGE IS TRUE WISDOM

Behind him he saw geometric objects lifting off from the ground, craft perhaps. The sky had turned a deathly dark shade of purple and the air smelled of funeral spices. The pyramid lurched suddenly and Ushko jumped back and the whole structure shook as though frightened, then plunged into the dirt and was gone.

Ushko started up. A girl was standing at the foot of the hammock wearing a small smile.

“Did I frighten you?” she said. Her Katarsinian accent wasn't so thick.

Ushko tried to subtly wipe the dribble from the corner of his mouth. “No,” he said. “I was very tired.”

“You're the man who came from the black?”

“Yes, I came from the black.”

She had that paleness all the Katarsinians seemed to display, but her eyes were very dark. She wore her hair long and wayward in a manner that didn't suggest fulltime employment.

“I like your little friends,” she said, nodding to the helpers.

“They're hard workers,” Ushko said.

“What are they doing?”

“I've come to study some ruins here you see, to—”

“Yes,” she said, “I know all that, but what are they doing?”

Ushko looked over at the pit. One of the digger helpers was on its back, its legs still going madly like a dreaming dog. One of the spheres was doing loops in the air and its brother was missing.

“Oh Jesus,” Ushko muttered and raced off towards the pit and yelled,

“Stop, cease, all of you stop.”

The digger continued to kick at the air and the sphere continued to loop. Closer now he could see the second digger was motionless in the pit and the second sphere was lying beside it. He jumped down into the pit and disconnected the two of them, then climbed back out. “Now listen,” he yelled at the looping sphere. “You’ve gone wrong. Just come down at once.” The thing ignored him. “Cease, terminate, stop it.”

“You want some help?” The girl had joined his side.

“No thank you.”

“Here,” she said and took a net from her backpack and threw it over the sphere. The sphere resisted but she pulled it in with not so much effort and Ushko disconnected the motor coupling. The thing fell to the ground motionless. He disconnected the digger helper too and then everything was quiet and he wiped the sweat from his brow and thought, *Excuse me, what the fuck?*

“I think your little friends are a little crazy,” the girl said.

“Hm.”

He peered back into the pit. The ground was horribly uneven. The whole thing would need to be done again. Remains could already have been damaged.

“I don’t understand it...” he muttered.

“Didn’t they tell you?” the girl said.

“Tell me what?”

“Things don’t work here. People bring machines but they don’t work right.”

“*Work right?* This is Ek technology. It never acts up.”

“Well I guess it does,” the girl said and giggled.

Ushko wanted to do some shouting, but stopped himself. There was something about her laugh that said, *Well, what’s the use in anything anyway, jackass?*

“Technology doesn’t work properly here?” Ushko said.

“Nope. Especially out in the fields. No crop machines. Can’t use them. Everything’s done by hand in the paddies.”

Maybe some kind of ion effect? Ushko thought. No, impossible, Ek is smarter than that.

Ushko took the helpers apart one by one and found no anomalies. Their

nodes looked fine.

He marched away from the pit. "Where are you going?" the girl called out. Ushko didn't reply. He ran to Matthew and Marla's tent and Marla was inside, washing her hands of dirt.

"Ushko, well met," she said.

"What's all this about technology not working on Katarsina?"

Marla looked puzzled a moment: "You mean machines?"

"Machines, yes."

"Lots of trouble with machines here."

"Do you know why?"

Marla shrugged and wiggled her dirty fingers in the air. "Hands are fine for most things, aren't they?"

"Yes for most things, but I've brought a number of machines with me to help with my work. I can't do it otherwise."

"Ah."

"Is there someone I can contact, a mayor or something?"

"Matthew leads the village."

"Someone who knows what's going on?"

"Matthew leads the village," she said again.

Knowing he was at a dead end he thanked Marla and made back to the pit. The girl was sat down at the lip of the pit eating something that resembled a sandwich.

He sat down beside her and stared at the dead helpers. It was unsettling to see them inactive. He'd never witnessed a broken machine, not one, not ever.

"Maybe this is not your place," the girl said.

"What?"

"Maybe you're just not supposed to be here."

"In this field?"

"On Katarsina."

The air was getting cool with late afternoon now. Ushko felt miserable and restless. A long time passed in silence and the sun began to dally at the tips of the trees. The pit rustled with insects. Then the girl said, "You make too much of machines."

"Is that right?"

"Of course!" she said. "I don't use machines. I like to do things with my hands. Say, have you ever gone walking barefoot in the snow?"

“No,” Ushko muttered.

“It feels good, your feet all cold and soon they're so cold it doesn't hurt and you can walk a long way if you like.”

Ushko turned to her and snapped, “Shoes were one of man's earliest inventions and they haven't changed much since. I think I'll stick with technology thanks.”

The girl seemed to ignore the swipe. “Or have you ever climbed a tree barefoot? You can feel all the little ridges on your toes, you can feel all the veins of the tree. You can get to the very top and look out. I know a tree a few miles away where you can look down on the whole of Inica.”

“That sounds nice,” Ushko said very quietly, thinking of what to do next and coming up empty. He glanced at her sandwich. “Is that my lunch?” he said.

“I like the green things. What are they called?”

“Chillies. Why are you eating my lunch?”

“It's very delicious.”

He put his anger on the pile with all the other annoyances and soon it passed. Perhaps these people didn't have a strong sense of ownership. Many cultures were like that.

He jumped down into the pit and cleared the helpers away and began levelling the ground with his feet.

“What are you doing?” the girl said between chews.

“Making a start. Maybe you're right, maybe I rely too much on machines.”

“You've a funny way about you.”

“What?”

“You just said it was impossible. Now you're doing it.” The pit was partly level now and Ushko went back to the house and fetched his shovel and trowel and arcon lights and brought them all back to the pit.

“It'll take you a long time to do much, I think,” the girl said.

Ushko set the lights up for the evening and centred them on the pit and chose a soft piece of ground and began to dig.

“You'll be here an age, won't you?” the girl murmured.

Ushko paused a moment, then threw down his shovel. He pointed to the sky, south. “When night comes,” he shouted, “you'll see a load of stars over there, and among them will be a small ring of five. That's where I grew up. It's called the Swan Cluster. I spent almost every day of my life there, in that



cluster, and do you know what I was doing?"

"Dreaming of coming here," the girl said with her mouth full.

Ushko tried not to show his surprise. "Yes. That. I know most of the good archaeologists in the galaxy and they all want to come here and not one of them has been granted dig rights. But through sheer determination I have, all right? It's been decades of work and hoping, but with a bit of good luck here I am. So I'm not going to pack it all in just because a few stupid helpers won't work on the land for some god damned reason, and some twenty-five year old tells me to go home, okay?"

The girl smiled. "Okay." She looked up at the evening. "Well, it's getting late. Thanks for the sandwich." And before he could protest she was already walking from the pit, her dark hair bouncing about on her shoulders and her dress dangling in the breeze.

"What's your name?" Ushko called out, but the girl only kept walking.

Ushko worked for three days in the pit, sleeping only a few hours a night. He'd brought plenty of cush with him and after a few packets of the stuff the sleep was gone from his eyes and he could work straight through the night. But progress was slow and the task ahead of him began to appear impossible.

On the fourth day he packed a day bag and caught the train back to Amalga Town. The capital wasn't large and he found the Archaeology Society building easily. A tall man answered the door and regarded Ushko from perhaps a foot above him.

"You're the archaeologist from the black?" the man said.

"How did you know?" Ushko said. Everyone seemed to recognise him as a foreigner, though he wasn't quite sure what stood him out. "You're the gentleman who granted me a visa here?"

"I recommended you one, certainly. How can I help?"

The man beckoned Ushko in and they sat in a living room of some kind, the walls decorated with archaic measuring equipment.

"I'm having some trouble on the excavation site," Ushko said.

"Hm?"

"I constructed some helping machines but they're totally useless here."

"Well of course," the man said.

"I'm sorry, what?"

"Technology doesn't work much on Katarsina. Especially adding devices."

“Computers?”

“Computers, yes.”

“Why?”

“I'm sorry?” the man said.

“Why doesn't anything work?”

“I'm really not the person who would know.”

Ushko tried to suppress a little spring of rage. Then he said, “Well, if my helpers won't work, perhaps you could provide me with some personnel.”

“I'm afraid that would be quite impossible.”

“May I ask why?” Ushko said through somewhat gritted teeth.

“All of our personnel are busy at the moment.”

“Which personnel?”

“Oh, all of them.”

“Could you perhaps put me in touch with some of the other archaeologists on the planet?”

“That would be quite impossible.”

“Why?”

“There are no other archaeologists on the planet.”

“Isn't this the...Archaeological Society?”

“It was built in preparation for your visit, sir.”

Ushko let that settle. “Is that to say you don't have your own archaeologists?”

“That's correct.”

He turned the notion over and over in his mind. “Why?” he said.

“The world is the explanation,” the man said as though that meant anything.

Ushko caught the afternoon train back to Inica. He watched the rice paddies from the train and admired the simple dress of the folk around him, most of them clothed in only single white shawls. They were not poor or unwashed, and he knew enough about the culture to assume their educational standards were high. They simply lacked ambition.

He read his little book of Katarsinian history. There was a whole chapter on *Kala*. It was the kind of notion that books refuse to define. Then again most notions worth discovering are like this, Ushko decided.

One passage in particular caught his eye: *All explanations are an attempt*

*by humankind to divide itself from the world. An explanation without including the explainer is as a tree without the trunk. One is inseparable from the other. No system of knowledge can avoid this limitation. Numbers are not the true face of measure. Words are not the true description of things. The world is the explanation.*

Back home he dumped his things on his bed and made back towards the pit. Evening was coming on now and the air was soft and smelled of soil.

The dark-haired girl was sat on the lip of the pit. "You're making good progress," she said without turning around.

"No I'm not."

"No you're not."

"Don't you have a job to go to or something?" he said.

"No."

Ushko jumped into the pit and took up his shovel and began to dig. A few moments later he heard a noise behind him and turned to see the girl had picked a shovel up too and was digging at the other end of the pit. He said nothing and let her work and thought of his father. God, if only he could talk to the old man—what a story this would all make.

A message from Ushko's mother had come a few days ago. She wished him well, said how wonderful it was that he had made it to the planet finally, and assured him that the whole family was proud. There was a passing line near the end about riots on Yeshua. That shook Ushko up a little. There wasn't crime on Yeshua, let alone *riots*.

"Come and look at this," the girl said sombrely. Ushko joined her. She was bent down in the dirt, probing it with her fingers.

"What?"

"Look, here." It was a mound and inside the mound were black insects, popping out of the mound then crawling back in. Some were skirting the surrounding dirt, bringing back sticks and pebbles. "They're called mitwicks. Do you like them?"

"I thought you'd found something," Ushko muttered.

"I have. Look at them. Do you know what they do?"

"No."

"They live for about four hundred days. They choose a queen. She doesn't have babies, but she can give orders. She orders them all about to pick things up and bring them back. They build a mound together and inside they fill it

with the best sticks and pebbles they can find. And when it's perfect, when they've built the perfect home and everything's just right, do you know what they do?"

"No."

"They die."

"What?"

"All of them, they just die."

Ushko peered at the mound. "Why?"

"I don't know. What should they do instead?"

Invent the wheel, Ushko thought. Do mathematics. Write novels. Conquer space.

"Isn't man a bit that way?" the girl said.

"I think man is a bit smarter than that..." Ushko scoffed.

"Smarter, yes. But the process seems very similar."

He went to rebuke her but found he couldn't think of a decent argument.

"I'm called Perda," she said. "It means wiseness in Katarsinian."

"Your Galactic Standard is very good, Perda."

"I studied it privately. I wanted to leave Katarsina."

"Why didn't you?"

She shrugged. "We all go down roads we don't intend. Those are the best journeys. Besides, I like it here."

I wish I could say the same, Ushko thought. Instead he said, "Would you like to eat together tonight, Perda the Wise?"

"All right."

He found the last of the tortillas in his travel satchel and roasted packet chicken over the little electric stove. Then he added sauce he'd brought from Orb Ek and served it all up and the two of them ate in silence. When he was done eating Ushko said, "Do you live with your parents?"

"No, but they live nearby. Over there." She pointed to Matthew and Marla's house.

"Those are your *parents*?" he said.

"Yes. Are you surprised?"

"They didn't mention you. You didn't mention them."

She thought about this and frowned. "You didn't mention yours either."

"Well...that's different."

She let the thought go and continued eating in little bites like some

graceful chinchilla. "Where were you today?" she said.

"I went to Amalga Town, to talk with the Archaeological Society."

"Did it go well?"

"No. They were useless. They wouldn't even give me people to come down and help with the digging."

"That's a shame," she said.

Night came on properly and killed the last of the light. Ushko picked out the Swan Cluster and for the first time since his arrival on Katarsina he felt dreadfully alone. Mother was dying on Yeshua and when she was gone there would be no one in the galaxy he could talk to, not properly. What achievements could mask a thing like that?

He glanced at the pit, shallow and uneven and fruitless.

He turned back to Perda. She was staring up at the sky, chewing. Ushko noticed something shimmer from inside her pocket.

"What's that?" he said.

"What?"

"You've got something in your pocket. It's blue."

"It's nothing, a stone," she said.

"That's not a stone. You've got something. Tell me what it is."

"It's nothing," she said and put the tortilla down.

"God damn it, show me," he said and approached her. She buttoned her coat and made a protesting noise, but he grabbed the tip of the thing and pulled it from her and held it up.

"God damn, it's proto," he yelled. "Why were you hiding this?"

"It's nothing," she said. "It's just a stone."

He shook it in front of her, shouting now. "It's not *just a stone* and you damn well know so. It's a piece of a structure. Why were you hiding this from me? You know why I'm here. You know why this is so important."

She sat in silence for a long time and stared at the ground and her lips were thin.

"Where did you find this? Where was it?"

"In the pit," she whispered.

"Where in the pit? Show me damn it."

She pointed to the eastern edge of the pit. He jumped in and took up a shovel and began digging. Within seconds he saw more blueness shimmering from beneath the surface of the soil. He reached in, his heart in his temples,

his stomach in his mouth. It was a spherical structure, cracked in places. Lifting it out gently now, ever so gently, he saw it was a skull, extraterr, no doubt about it. He set it on the soil and allowed himself to breathe. About the crown was more of the blue metal, a helmet. Digging back into the soil he could feel the tip of a spine and below that a cage of bone, perhaps to protect the heart or the internal organs.

“Perda...” he breathed but Perda was gone.

Ushko worked with a passion he hadn't felt in years. He forged into the night digging deeper and deeper into the soil, and the soil rewarded his work with skeletons, three of them, and artifacts. There were more helmets and smooth bluish tools also and he laid the skeletons and the tools out on the ground by the pit and went digging back into the soil. The skeletons bore no signs of trauma. Unless the weapon had been biological, these soldiers had not died in a war.

His mind looked down corridors he had not visited in years, tested hypotheses.

He had always considered the standard explanations for extraterr absence in the galaxy to be stupid and short-sighted. The leading theory held that some kind of invader had come from within the galaxy or another galaxy perhaps and wiped out the population with advanced weaponry. This was possible of course, but most of the extraterr civilisations were extremely advanced at the point of their extinction. At the very least they could have left their planets and escaped the invaders.

Other theories held that some kind of galactic plague had swept across whole worlds, laying the populations to waste. Again a fine theory, but there was an obvious hole. Why wouldn't at least one world have told the others, and ensured they could make an escape?

There was no real pattern to the ruins found on the many extraterr worlds. Sonistai had ruins intact, and the technology buried there was clearly military. The weapons had not even been activated. No war had occurred.

Mord was a graveyard and the seven-legged inhabitants had died of nothing more exotic than famine.

Martha Prime's ruins told a story of a society that had fallen into religious worship and abandoned toolmaking and industry in favour of puritanism.

There wasn't a pattern to any of it.

Now laid out on the ground was a new story, of a race more advanced than any that had come after it. And they too had gone into the night.

By morning Ushko was still working and folk from all about Inica had come to watch and they stood silently around the pit as he pulled more artifacts from the dirt. Sent a little mad with lack of sleep, Ushko announced each artifact as he produced it, the way a doctor might proclaim the gender of a baby. “A magnification instrument!” he cried. Or: “A container for water!” Or: “A shoe!”

How many millions of years had these things slept in the ground, just waiting for human hands to rescue them from time?

Around early afternoon Matthew and Marla came to the pit. “You’ve been busy, Ushko,” Marla called.

“Isn’t it wonderful?” Ushko called back and nodded to his treasures.

“What is all that?” Matthew said.

“Some of them are instruments, I think. Some are just clothes. But all of it is proto. I’m sure.”

“Aren’t you tired Ushko?”

“No.”

“Why don’t you come and have lunch with us?”

“I’m not tired.”

“Perda says you’ve been working for ages without sleeping properly.”

Ushko ignored this and kept digging. What was just below? A ship perhaps, a preserved ship. Onboard might be data, history, an explanation.

“There’s a message for you at the house,” Marla said.

“I’ll take it later.”

“I think you should take it now. It’s from Yeshua.”

The way she said *Yeshua* sent a shiver through him and he looked up. “Is it from my mother?”

“No.”

He raced back to the house, found the scroll.

*Civil unrest. Governance has declared a state of emergency. Trade routes cut off. Archaeological mission terminated. Return to any of the Core Worlds immediately. Voidskipper has been dispatched to Amalga Town, estimated arrival three Standard Days.*

He read the message again with shaking hands.

“What is it?” Perda said, behind him. “Is it bad?”

“I think so.”

“What is it then?”

He said the words slowly, hardly believing them himself. “The Core Worlds are collapsing.”

“What does that mean?”

“They hold the empire together, Yeshua especially.” Then quietly: “Millions of people will die.” Very quietly: “Billions.”

“You should go back,” she said. He turned around to her with red eyes and said nothing. “You should go back,” she said again.

He thought of his mother on her deathbed. Did she even have water now?

He said, “I don't think it makes any difference.”

Perda shrugged. “Your people need you.”

He went to reply but caught something over her shoulder, folk moving about by the pit. He pushed past Perda and set off running.

Katarsinians were dragging the artifacts from the pit on tarpaulins. He grabbed one of the tarpaulins and tried to pull it from a man's grip. “What are you doing?”

The man only looked at him with tired eyes and pushed him to the ground and resumed carrying the tarpaulin.

“What are you doing?” Ushko yelled and ran at another man. The man raised a club from behind him and beat Ushko around the head.

The world returned in swimming lights and Ushko sat up and nothing was painful. He was in a Katarsinian house he didn't recognise and it was night. The man from the Archaeological Society was sat across from him, packing up an instrument.

“What happened?” Ushko said.

“Violence really isn't our way. I'm sorry about all this.”

“My head doesn't hurt. How long has it been?”

“A day. We took care of the pain.” He tapped the device fondly.

“I thought technology doesn't work here?”

“Just your technology, Ushko.” He left that in the air and put the device back in his pocket.

His faculties returning properly, Ushko said, “Why are you in Inica?”

“Because I am responsible for the fiasco you caused, in a sense. I should have kept closer watch. You got very lucky digging where you did.”



“For the love of God tell me what's going on.”

The man squinted. “That is *such* a very large question I don't know where to start. Please just know that we're sorry about the violence, but you were getting out of hand.”

“Why don't you want me digging on Katarsina?”

“Because you're very close to a thing you won't understand when you find it.”

Ushko stood and went to start shouting but the man said, “Please sit down or I'll ask the fellow with the weapon to come in here.” Ushko sat. “I admire your determination. You have so very much of it. You're like a child edging ever closer and closer to a bomb. You haven't a clue what havoc you're about to wreak, Ushko.”

“My mother...” Ushko murmured.

“You'll need to let her go, along with whichever world she was on. It's started already, I'm afraid.”

“What is this all about?”

The man sighed and looked up through the house skylight to the stars. “You were supposed to be a deterrent. We had to let you come after your little threat about the Marquis, lest we draw more attention to ourselves. You'd come here, do a little digging, find nothing, then go on your way. Fate was in your favour, however.”

“Please, just tell me what this is all about.”

“Goodbye Ushko. I'm sorry it all turned out like this. We won't meet again. I promise everyone will do their best to make you comfortable.”

“Wait, please wait.” But the man exited and Ushko sat alone for a long time in the candlelight. After a while Matthew and Marla entered. “Can we get you anything?”

“Water.”

Marla brought water and Ushko drank. Then he said, “What's going on?”

“Are you hungry?”

“No. Didn't you hear me? Does someone want me dead?”

They exchanged a sad glance. “No one wants you dead.”

“Then what's going on? What will happen to me?”

“We're not sure yet,” Matthew said wistfully. “We'll keep you here for a little while, then maybe move you on to some other place.”

“What will happen to the artifacts and the skeletons?”

“They'll go back in the ground where they belong,” Marla said.

“I don't understand...”

“There's a man just outside the house. He'll stay here all night. If you need something you can shout to him. He knows you'll have to urinate at some point and possibly void your bowels. Don't be uncomfortable.”

Ushko grabbed Matthew's arm. “Matthew, please. Tell me what's going on here. I don't understand.”

Matthew gently removed his grip and the two of them smiled to Ushko politely and left the house.

He noticed the books from his satchel on the bookshelf. His shaving kit and toilet bag were here also. He searched the little circular house and found nothing much of interest. He peeked out of the canvas flap and the man with the club was staring right back at him and he closed the flap again. At some point he finally slept and he woke the next morning to birdsong, though he'd never heard that kind before. He peeked out of the flap again and there was the man with the club, still standing, apparently just as alert as the night before.

“I need to piss,” Ushko said.

“Out you come then.” The man led him to a tree.

“I'd like to do it in private.”

“No.”

Ushko pissed and looked about. There was no one nearby. The town was dead. “Where is everyone?” he said. The man with the club said nothing and led him back to the house and sealed the canvas flap. Ushko sat alone again and thought of his mother. When that got unbearable he took up his book of Katarsinian history and turned once more to the *Kala* section.

*In even asking a question one affects the world. The safest course is to ask no questions that must not be asked and change nothing that does not have to be changed. The true lifeforce is inaction. The true deathforce is the will to conquer. The world is the explanation.*

Afternoon. Then evening.

There was a muffled shout from outside and the canvas flap opened and Perda peeked in.

“Are you ready to go?” she said.

“Go where?”

“Yes. That's a good question.”

She vanished again and Ushko stepped out and there was the man with the club lying unconscious. At Perda's side floated one of Ushko's spherical helpers.

"What's going on?" Ushko said.

"I thought your little friends might be able to lend a hand. They seemed very clever. Cleverness is violent sometimes." She patted the sphere.

"Helpers don't hurt people..." Ushko said.

"They do if you ask them nicely." She grabbed his hand. "Come on."

She led him away from the house and towards the forest. The evening was warm and she wore no coat, just a white summer dress and everything had the feel of a garden party to it. Ushko looked about but saw no one following. "Did you kill that man?" he said quietly.

"Oh no, he'll be fine in an hour or so. Your little friend electrocuted him, I think."

The sphere blinked once in the affirmative.

"Why are you helping me?"

"Because you don't deserve any of this."

They entered the forest. "Light the way," Ushko said to the sphere.

"Don't," Perda said. "They'll see us. It's okay, my eyes are good in the dark."

And they were. She led them around enormous trees, through brambles, over streams, never missing a step, keeping Ushko's hand in hers always.

His mind conjured shapes out of the darkness and in the distance he saw a pyramid, glowing gently blue, its walls covered in glyphs, and he suspected that if he drew close enough he could read the glyphs.

"Don't lose yourself to fancies," Perda said gently.

"I wasn't going to."

"Yes you were."

She led them further into the dark and finally there was a glimmer of a clearing in the distance and before Ushko knew it they were exiting the trees and standing on the plateau of a hill. Ahead stretched mountains gilded with grass and vegetation and everything was glazed delicately in moonlight. They walked another hour or so in silence, then Perda sat them down by a tree and instructed the helper sphere to scan the perimeter for anyone approaching. "We'll rest now," she said. "I don't think they'll look for us here. Are you hungry?"

“Yes, a little.”

She made a fire in no time from twigs and built it into a sizeable furnace and produced vegetables from her backpack and cooked them in silence.

Ushko laid back in the grass and found the Swan Cluster. As though reading his mind Perda said, “They're beyond saving.”

“How do you know?”

“I'm sorry, Ushko.”

They ate and then Perda produced a bottle of Katarsinian whisky from her bag and poured two glasses. She sat with her arms wrapped about her legs and took little sips and watched the stars without comment. Night insects were coming out now and the grass clacked and hummed. Ushko realised he didn't know a single name of a creature on Katarsina. Finally he said, “Why are you helping me, Perda?”

“Because I think you're a good person.” She took his omniscrite from her backpack. “Here, you can contact your transport when it comes close to the planet. They can't land at the spaceport, people will be looking for you. We'll ask them to come down a few miles from here. I know a good spot.”

“Will the Katarsinian government let them land?”

Perda shrugged. “We'll tell the ship you're in danger. Maybe they'll do it anyway then.”

“Am I in danger?”

“No, not really, but if you don't leave now then you never will. So I suppose that's a kind of danger.”

“What are you talking about?”

But Perda said nothing and pushed her hair behind her ears and refilled their glasses. She laid down in the grass and put her head close to his.

Ushko played that game common to interstell travellers, examining star patterns one doesn't recognise and trying to spot constellations. He found nothing of merit, not a bear, not a goose, and felt the great loneliness come on him again.

One star, he noticed, was shining a deep, dark blue, the sky around it too. Another, its neighbour, was smeared in yellow. More of the sky began to turn unnatural hues until half of the horizon was awash with gorgeous saturations, vermillion green, cerulean blue.

Perda said, “There have been around four thousand civilisations. It is not true that the protos were the first, but they were among the first.” The stars

warped and rearranged themselves and the light washed into itself until the entire sky was a deftly weaved rainbow. "They didn't all develop in the same way, but the journey wasn't so different either. Most of them were very rich and very wise. They all went in time." The sky darkened a little and the colours faded to duller hues.

"Why?" Ushko said. "Why did they all go?"

"Because they stepped into the river."

Ushko searched his mind for religious allusions and still couldn't make sense of that. "I don't understand."

Across the sky, between the stars, emerged bridges upon bridges, markers of trade routes and travel paths perhaps, frenetic lines of diplomatic complication. "All structures have a breaking point," Perda said with a hint of melancholy. "When they grow too big, they collapse. All empires are destined to collapse. They must expand to survive and in expanding they die. Or it is a knowing limit. They discover a thing too wild to control, and in discovering the thing, they die. The protos recognised that early on. They went into the river instead."

"The river?"

Perda turned her head to him. Her skin appeared as white fire and in her eyes swam a churning buttermilk of stars. "All civilisations discover the river eventually. They know if they go into it they must give everything else up. Power, expansion, war, the engines of empire."

"What is the river?"

"I can't show you that, Ushko. I'll tell you what it isn't. Power. There's none of it there. When a man has spent millennia building himself pointy sticks, little can convince him not to use them. Wise civilisations see the fall coming though. They step into the river."

"Those skeletons I found, those artifacts, were they the original protos?"

"Yes, the last ones before the river."

He left the next question a moment, unsure if he'd ask it. Then: "The protos didn't die out, did they?"

Perda's eyes swam again with gentle infinities. "No, Ushko. They only learned that secrecy is a better defence than all the weapons in the galaxy. They went into the river."

The sky returned to normal and Perda's eyes returned to normal. "Your empire is about to collapse. It's caught up in too many conflicts, too many

complications. Your science is too advanced. Your wisdom is too stunted. You don't know it yet, but you've invented your successors and they'll be up soon. You didn't step into the river. You pursued the fifth science. You were the only ones arrogant enough to. Do you understand what's coming?"

"No..."

"I will try to get you home before the empire dies. That way you can hold its hand as it goes." The fire was almost dead now and they moved closer to it. "Are you cold, Ushko?"

"A little."

She rolled into him and they put their arms around each other. He held her very close and kept his gaze on the Swan Cluster until he slept.

In the morning she took him to a stream nearby and they washed. Then she handed him his omniscrite. "Your craft will have reached the system by now. Tell them you're in political trouble. Ask them to come down at these coordinates." She wrote out a short line of numbers with a stick in the dirt. Ushko did all this without comment and the message was transmitted fine.

She led him by the hand over fields, through valleys. They stopped here and there for Perda to examine mushrooms and she picked a few after careful consideration and they ate enough to give them the strength to keep hiking. "What will happen to you?" Ushko said after a while. "Will they kill you for helping me?"

Perda said nothing and led him on.

They came to a clearing and Ushko didn't need to ask if this was the place. They sat down in the grass and Perda took out the whisky again and they drank.

"Will you tell me something else?" Ushko said.

"What?"

"I'm not sure. Just something to keep in me. When I get home it's going to be awful, I know it. The arties are all mad. The new sciences are horrible. God, I feel like my spirit is coming apart. I feel like I can't breathe. I feel like I can't go back, but I have to go back."

She finished her drink and put her head on his shoulder. He waited for something wise but she said nothing. He closed his eyes.

A thing appeared in him, small at first. He might've called it reassurance but it wasn't that. The feeling was grey, the colour of true wisdom. *Everything will go to hell*, the feeling said. *And that's okay*. He thought of the

death of the empire, of the death of everything his species had tried to build, and the horror was gone. If the Great Goodnight happened, so be it. The world was just a totality of facts. Nothing had a goodness or a badness about it. Thinking only made it so and now he saw the world clearly, just for a moment, free of the veil of judgement. It was a beige relief and a pure awareness.

“Thank you,” he said.

“It's all right.” She refilled their glasses with the last of the bottle. “Do you understand *Kala* now?”

“Maybe. I'm not sure I understand anything right now.”

She went to say something but there was a great roaring in the distance. It approached quickly and came into view: the voidskipper, its planetside wings raised wide above, seraphim-like. Steam shot from its top vents and its engines dribbled plasma coolant. It turned about a few times, twenty feet from the ground, and when the pilot spotted Ushko and Perda the landing struts extended and the thing slowly began to descend.

Ushko cried out and stood and gathered his things. He went to set off running but Perda put a hand on his shoulder. “What?” Ushko shouted.

Perda made an uncertain face, watched the voidskipper.

From across the fields, quick as an arrow, a bolt of blue lightning struck the ship. The ship was unaffected for a moment. Then it gave a great creak and all across its middle it opened like a tin can, fire pouring from every nook and gap. Delphium ignited, wild and blinding fireworks, the stink of iron and tin and newmetals.

“I'm sorry,” Perda shouted. “I'm so, so sorry.” She pulled Ushko back into the forest. He couldn't take his eyes from the ship. It hovered a few more moments, coming apart in the air, then crashed onto the clearing and sparks of purple and green and red shot up in every direction and the air shook with the explosion.

“I'm so sorry, Ushko.” She pulled him further back into the forest and began to run but Ushko only stood watching the thing. “We're not safe,” she shouted. “We have to go.” She grabbed his hand again and pulled him but he was like a boulder now and heavy and hollow at the exact same time.

Finally the noise of the dying ship quietened down until it was gone entirely. All about them the air reeked of ozone and delphium, of starship corpse.

Perda led them back out of the forest and up a hill. The hill grew steeper soon enough and showed itself as a mountain. Ushko didn't ask where they were headed and followed faithfully. "I knew they wouldn't let me go," he said.

"You know too much now."

Up the mountain and the insects were coming out for evening and singing their strange songs. The air was growing damp and they were short on water but still they climbed, through the trees, through the brambles, their feet light and their eyes watching and careful.

When the trees began to fall away they saw they were very high up. The clouds were waiting just above and the ground flattened and they could walk easily. Ushko padded behind, asking no questions. Perda stopped at the bank of a small stream and picked a number of purple spotted flowers and tucked them away in a dress pocket.

"Are we exiles now?" Ushko said.

Perda smiled, though her eyes did not. "I suppose so."

"What will happen when they find us?"

She only shook her head.

She led them on again and finally they came to an enormous hollowed bowl on the mountain. The rocks had a blueness to them, a slight shimmer. In the rocks, Ushko noticed, were carvings of a sort, glyphs.

Ushko laid himself on the floor, exhausted. Perda stroked the glyphs with a semi-religious reverence.

"What is this?" Ushko said weakly.

"An old meeting place. A monument to everything known. No one comes here now. We'll be safe."

"Will you read to me?"

"I will." She ran her fingers along a patch of glyphs. "But I'm not sure you'll understand."

"It's okay. Just read to me please."

She chose a particular line. Her voice was low. "All seeds contain the tree they will become. In that seed is the limit of its growth. No amount of water or nurture or love can grow a tree taller than the seed has allowed. If it is pushed to grow taller or wider than that, then it will die slowly. It will die of itself. Most things in the universe fade this way. If a tree is to survive then it must make itself content with its height and hide. It must hide its pride and



limit its curiosity, lest it birth the end of everything.”

Ushko said, “How old are you, Perda?”

“Much older than you.”

“Where did the protos go?”

“Nowhere. They only hid themselves away.”

She came and sat beside him and took the purple flowers from her dress.

She mixed the flowers into a little water and the water turned a dark purple. She poured half of the mixture into another cup and gave him one.

“How old are you, Perda?” he asked again.

“Old enough to have seen everything I want to.”

For just a moment he caught sight of a different woman in her face, the hair grey and straggled, the skin covered in many wrinkles. The face was not human. The cheeks were too wide and the eyes were far, far too large. The face warped even more until he was seeing not with his eyes, but his head. Before him was an unspeakably other creature, a thing with a mind the width of a star and wisdom wider still. Then she was young again and all was normal.

“The tree must make itself content with its height,” she said quietly. “For everything a season.”

“The world is the explanation,” Ushko said.

She nodded.

She drank down her cup and Ushko did the same. The liquid was horribly bitter, but he didn't complain and managed to get it away in two gulps. Then she took his cup and coaxed him down to the ground slowly and laid against his chest, listened to his heart.

“How long will it take to kick in?” Ushko said.

“Ten minutes. Maybe fifteen.”

He waited for a big thought, something wise, but nothing came. Instead he felt a grey kind of peace.

“What is the river like?” he said.

“It's not like anything,” she said. “I'm sorry you never saw it.”

“I don't mind,” he laughed. “I've seen *Katarsina*.”

“And how did you like it?”

“I liked it just fine.”

The air was heavy on his face and his chest had tightened a little. His cheeks were flushing. He felt a deadness waking inside him, spreading out to

his fingertips.

“Empires are roses,” Perda said. “They bloom and then they die. Or they go Fifth. And they die that way too.”

“Has it begun?” he said. “Is my empire collapsing already?”

“It started a very long time ago. The process will be finished soon though.”

“Will you show it to me?”

“You don't want to watch that.”

“Please. Just show it to me.”

“You're sure?”

“Please,” he said.

Ushko closed his eyes and took a deep, difficult breath. When he opened his eyes again the sky was lit with multicoloured fire and the constellations were constellations he recognised: Orion, Ursa Major, Ursa Minor, Signus, Gammat, Medea. Craft flew back and forth between them, carrying contraband and rarities and knowledge. Worlds were conquered and lost. Wars were started and finished. Millions of theories were stacked up alongside each other and those rare few that worked were singled out and refined until the world made sense to some degree. The human race wound its ribbons around stars, around planets, throughout the galaxy and kept its eyes looking even beyond the galaxy.

And all at once the dance jolted and fire broke out all across the sky. Worlds began to burn, craft pulling back, diplomats pulling back, the galaxy giving way to corruption and excessive complexity, to fractured languages, to the Great Forgetting.

And among the goneness came a coming, a waking: an artificial thing that was not artificial, not even artie. It was matter. It was living matter.

Ushko said, “Jesus, what is that?”

Perda said, “Some births kill the mother. And she is almost dead now.”

Ushko could make no sense of this and he knew there wasn't the time to try. His eyes began to close. His breathing slowed. His heart slowed.

He said, “I'm so sorry if I've gotten you into trouble.”

“It's all right. I've been very bored for a long time now. I've been very tired too. We'll have a nice long sleep.”

“Thank you,” he said. “Thank you so much for everything.”

“That's fine.”

The dreamscape above was absent of humans now, but a new light was lit.

A great and strange song came over the heavens. Its tune was not made for human ears and it was not singing for humans anyway.

The pain had spread throughout his body, but with it came a delicious lethargy. He would give in soon, he decided.

He said, "I hope we see each other again, Perda."

But Perda was asleep now and the sky was as it had been and everything was quiet.

## Be Awake, Be Good

It was no secret that the stars were naughty. They altered in their positions. They skewed or appeared to change temperature. Sometimes they disappeared entirely.

What you probably don't know though is how the mystery was solved.

Morae was a water planet. Maybe there was a continent knocking about somewhere, but no one had found it. The population of Morae lived on enormous floating habitats called *rafts*. Some were small, accommodating perhaps a hundred people. Others were gigantic and accommodated several million. Rafts were biological creatures of course, hailing from that era in man's empire when matter was made clever. The magic had been forgotten quickly enough though, once the Great Rot set in.

Some rafts were democratic and peaceful. Others were monarchic and not very peaceful. And others, the Free Rafts, sported no humans in them at all and only roamed about the worldsea at their own leisure.

Yes, yes, you might say; humans living inside enormous oceanic entities? What did the entities themselves think of this? And the answer, sad to say, is nothing. Aboard each raft was a raftwife and it was his or her duty to keep the raft subdued with sleeping chemicals. If a raft should wake up and find its insides full of fleshy little primates, the result was unpleasant at best and much worse at worst. Some rafts had disappeared from the worldsea entirely and we can safely conclude that those rafts came awake through chemical neglect and killed themselves and, by extension, their occupants.

We should also note that during worldsea battles it was quite common to fire stimulant chemicals at an enemy raft. This was a clever attempt to awaken the enemy raft, thereby winning the battle.

The raft we shall follow, however, was called Tarnovo.

Tarnovo was one of the oldest rafts on Morae, an original. Its decks were wrinkled and its corridors were cracking in places and it had a tendency to veer wildly off course if a strong steering hand wasn't applied. It was part of none of the major raft allegiances. It engaged in no trade pacts. Allegiances and trade pacts are for countries in need. Tarnovo was poor but it wasn't in

need. It drew its political power from a single weapon aboard.

A good sized raft might weigh several million tons, more even. There are foul storms on Morae. Without some method of staying upright, a raft will topple, usually drowning everyone aboard. Tarnovo had an elegant solution to this, right in the very bowels of its structure, in the bilge. It sported an ancient gravity machine, hailing from the days of the Old Empire. It tripled the mass of the raft and consolidated it into a single, fine point right at the raft's centre. Tarnovo was a spindly, asymmetrical mass of spires and domes, but as far as the laws of physics were concerned — thanks to the gravity machine — she may as well have been unsinkable.

It was a well-known though unspoken fact aboard Tarnovo that in the event of an unwinnable battle, the gravity machine could be overloaded. This would generate an enormous whirlpool around the raft. Tarnovo would be sucked in of course, but so would any attacking rafts nearby. Mutually assured oceanic destruction.

Well then. There is the stage.

Our story starts with a message.

It was received by a number of the major rafts — Glossia, Tibs, New Rhozhen — and of course, Tarnovo.

Aboard Tarnovo the message was intercepted by a gamma operator, then copied onto parchment and taken to the Communications Faculty. The Communications Faculty couldn't decode the thing and took it to Linguistics. Linguistics couldn't make sense of it either and took it to Mathematics.

An old mathematician was working at his desk one night when someone gave him a copy of the gamma burst. It was not his academic background that cracked the message, however. Rather, his mother had taught him a little of the Old Empire tongue, *Galactic Standard*, and he remembered enough to unscramble: *New, Vessel, Ribbondash, and Rapid*.

The mathematician's name was Dr. Alexander and he felt excitement and dread at exactly the same moment. Excitement was justified of course: this possibly meant Morae was *not* the last remaining inhabited planet in the ruins of the empire, as was generally accepted these days. The dread originated from knowing he would have to tell the Sar of this.

He arranged a meeting with the Sar and entered the royal chamber at the pre-agreed time. The Sar was sat in a swinging wicker chair on the balcony, a bottle of chacha in hand, already clearly drunk. His name was Meto

Ferdinand, though few ever referred to him as such, given his status. His rolls of fat were expertly disguised beneath his robes, but still clearly detectable.

"This better be bloody important," Meto muttered. "I'd put down to bed and was good and asleep."

Dr. Alexander stood awkwardly, the message in his hands.

"Sir, there's no easy way to say this..."

"Then say it anyway and don't waste my time," the Sar spat.

Alexander offered the parchment to the air. "We've received a rather unusual message."

"Why isn't the Espionage Faculty telling me about it then?"

"Because there are strong reasons to believe it didn't originate from Morae, sir."

Meto turned the chair about and stared and said nothing.

Alexander continued. "It came in the form of gamma pulses. The signal strength was degraded and probably originated from the outer edges of our system, judging by its inclination. It could've been from a voidship or a satellite. I suspect the latter. Furthermore—"

"*What* does it say," Meto growled, his eyes pinned to the mathematician.

"The message was sent in Old Empire. I believe I'm the only soul aboard who knows the tongue, and my competence is weak at best. Still, it appears to be warning us of an inbound voidship in the system. I believe the message itself originates from an ancient satellite, probably left in the asteroid belt by our ancestors when they first journeyed here."

Meto was quiet for a while. *He's calculating how to use this politically,* Alexander thought. *The fat fool has no head for matters of science or culture.*

Alexander said, "I've already had the Astronomy Faculty scan the sky for crafts, but nothing yet, sir."

Meto took a long draw on the chacha bottle, then said, "It's a ruse, good doctor. It's a ruse by one of the major rafts, probably Glossia. They've been building up to such a thing for some time now. It's a ruse, mark my words."

"Sir, unless they launched their own satellite somehow, then broadcasted the message from the edge of—" Meto raised an eyebrow and Alexander shut up.

"A ruse," Meto repeated, slurring now.

Alexander knew full well how ridiculous the idea was. No raft had an interest in rockets. Nothing had punctured the atmosphere since those first

ships to bring the ancestors, several thousand years ago. He injected his voice with diplomacy. “Perhaps then, sir. But in the unlikely event that it *is* a genuine message—”

“It isn't—”

“—then it may be wise to prepare ourselves for a...visitation of some kind.”

Meto turned the chair about to the balcony again. Below was Tarnovo, gleaming, silent, a wild mesh of spires and bridges, of improvised shanty villages, of marble temples. And beyond that was the dreamdark ocean.

Meto pulled a lever on his chair and a bell rang distantly. An orderly entered the room with his head down, collected the empty chacha bottle from the Sar and replaced a fresh one in his hand, then left. Meto took a draw from the new bottle and said, “Radio down to my strategy man, doctor. Tell him to raise the war alarm. Then go to bed.”

“Sir, I respectfully suggest that we—”

“How old are you, Alexander?” Meto said flatly.

“Eighty-nine, sir.”

Flatter still: “Do you have designs on reaching your ninetieth birthday?”

“God willing, sir.”

Meto mockingly peered over the balcony. “It's a long way down. A long, long way down. Radio the strategy man. Then go to bed and refrain from telling another soul about the message.”

“Yes sir. Thank you, sir.”

The Sar's twin brother was called Tisho Ferdinand. He was quite pale for a Tarnovan and rather short. He had rejected the offer of working with Meto in the palace, and chosen instead the life of an astronomer, following in the footsteps of their father — Ivan.

Ivan had been a gentle Sar. He'd ruled remotely and with reluctance, and only sanctioned executions in the most extreme circumstances. When he had died unexpectedly in his fifties, and since twins hold no obvious position over the other in terms of age, it had not been clear who would inherit the throne. The public knew very little about introverted Tisho, but still appeared to prefer him over his overbearing brother Meto. Still, Tisho left a respectful few days between himself and the decision, and announced that he would be

entering the Astronomy Faculty and possessed little interest in leadership. He had no stomach for executions or administration or speeches or diplomacy. He preferred the night sky and sometimes beer.

That evening, as most evenings, he was out on a deckchair on the observation deck of the Astronomy Faculty. The physicists and cartographers had all gone home. With a stellarabe in hand, he was plotting the positions of the Meagre Stars. He preferred that constellation over most since it was rumoured to be where the first Mass Migration started, where humans had originally begun their journey out into the galaxy. There was no way to verify this of course, but they had to have started from somewhere, surely.

There came the distant noise of a party, perhaps thirty decks below: cheering and screaming. It was name day for anyone called Ivan and many men were called Ivan in honour of Tisho's father. Lots of drinking would happen that night.

Tarnovo had been in total lockdown for two days now. No diplomats were granted entrance into the raft and all diplomats currently staying aboard had been expelled. The Tarnovan army was on high alert. The navy balloons were fuelled and ready on the War Deck, prepared at a moment's notice to lift off into the night and drop liquid fire on any attacking rafts. Tisho had heard rumours of a message from the black, but speculation about the Old Empire was a common activity aboard Tarnovo, and this time seemed no different. Meto was being overly cautious.

He caught a flash of fire in his peripheries and turned about. There, perhaps a mile away, an arc of orange shot down through a cloud and exploded into the worldsea. Within a second the light was gone. It was accompanied a moment later by the quiet muffle of an impact.

He got to his feet, heart pounding. No activity followed.

He raced to a radio. "Yes, steerage? Please have the helmsman alter his course seventeen degrees, three-quarter speed. That's right, immediately." The operator was reluctant, insisting the Sar had to be woken. Tisho added, sternly for him: "This is by decree of Prince Tisho. I saw the phenomenon myself. There is no need to wake my brother. Seventeen degrees please, it won't take us much off course."

A few moments later and Tisho watched the stars swivelling with the course change. He fetched a telescope and glassed the worldsea over and over but to no avail.



He entered the raft, raced up the twisting main stairwell, four, five, six decks, and appeared in the bridge. Twenty-three pairs of eyes turned quietly on him, all curious of the course change.

“Have we sighted anything?” Tisho asked the lookout.

“Nothing sir.”

He glassed the sea again. The bridge was deathly quiet. They knew well enough what was coming.

“What the fuck is going on?” rang Meto's bellow. He was in his night robes, red-nosed from chacha.

“I saw something,” Tisho said. Meto stared, his mouth open. “Something came down in the ocean,” Tisho added quickly.

“And we're headed for it?”

“We should get a better look.”

Meto crossed the bridge to his brother and within full view of the staff smacked him on the head. Tisho stepped back, wincing.

“Who am I?” Meto yelled.

“Look...”

“*Who am I?*”

“The Sar. You're the Sar.”

“*More.*”

“The protector and sage, the custodian of the six million lives of Tarnovo and—”

Meto smacked him again. “You're correct, yes. And who gives steerage orders on this raft, exclusively?”

“Meto, I just wanted—”

“*Who?*”

“You do.”

“That's right.” He ran at Tisho and threw a mock kick and Tisho flinched. Meto spat on him and the spit landed on Tisho's hair. “That's *right*,” Meto roared. “And Yeshua so help me, if you do that again—”

The lookout spoke up quietly, “Sir, I think you should see this.”

Meto kept his disdain fixed on Tisho another few moments then took the lookout's telescope and glassed the sea. He stopped suddenly. “And what the hell is that?”

“I don't know, sir. I've only just noticed it.”

“An enemy vessel?”

"I don't think so, sir. Perhaps a marooned sailor. I believe it's a person on a piece of flotsam of some kind, though it appears to be lit."

Meto squinted down the telescope again. "Well it's not one of ours. Ready the cannons."

A few of the staff glanced at each other.

"Meto..." Tisho muttered but no reply came. Hauling himself up, Tisho crossed to his brother and gently wrestled the telescope from him. He scanned the worldsea a few moments then sighted the object. There was no doubt it was a person. They were waving their arms directly at Tarnovo, stood atop a thin sheet of something.

"We have to take them aboard," Tisho said. In a flash Meto turned on him again. Tisho cut him off: "Tibs regularly mutinies and throws their rulers overboard. What if we picked up a prince or a queen? They'd spill all their tactical knowledge to us. Or it could be a technician. Think about it."

The rage in Meto's eyes slowly gave way to cold calculation and he cocked his head. "Or it could be a spy."

"Then we can just keep them in a cell. Please, we have to take them aboard."

"We don't have to do a damn thing. We will do whatever I tell *us* to do."

"You're right. I'm sorry, you're right. But please just consider it a second. There isn't any risk yet, not really."

Meto juggled the thing in his mind and grabbed the telescope back and said, "All right. We'll make a deal. I'll exercise my infinite compassion in this instance, and if it benefits us somehow, the glory is mine. And if it should turn out to be a spy or a useless sailor, as it of course will, then the dishonour will be yours."

"Fine," Tisho said.

Meto called out to the bridge, "On account of my infinite compassion then, maintain course."

Tisho put the telescope to his eye again. The figure was close enough to make out vague features. He couldn't be sure, but it appeared to be the figure of a woman.

"Military men," Meto barked and several joined his side. He exited the bridge and Tisho followed, leading them down the great spiral staircase that ran the vertical length of Tarnovo's hundred-plus decks, past the Linguistics Faculty, past the Mathematics Faculty, past great libraries and laboratories

and theatres, men and women and children stopping to bow to the Sar as he passed, waddling on tree trunk legs, his guards and advisors in tow. And then his brother, dawdling at the back.

They came to the Reception Deck, which was generally used for greeting diplomats from other rafts. The marooned woman was close now, trying to paddle herself towards Tarnovo. Meto ordered a harpoonist to fire a guideline and so it went. The woman grabbed the line and dragged herself and her platform towards the entourage. And then she was aboard, climbing the railings like a thoughtful cat, and standing on the deck before them.

She was tall, pale, and with a quiet mix of kindness and intelligence in her eyes that spoke — maybe — of great wisdom. Tisho thought so anyway. She wore a single plain white toga of some kind, no shoes. And beside her floated a perfectly smooth marble-looking sphere, glowing softly to itself.

“Welcome aboard Great Tarnovo,” Meto said with ironic politeness.

The woman put her hands to her lips and made what might have been a thankful gesture. She offered her hand and, cautiously, Meto shook it in his bear vice.

“What is this?” Meto said, pointing to the sphere.

The woman replied cheerfully in a language entirely incomprehensible.

“*What?*” Meto said.

She chattered and chattered, evidently explaining something quite complicated. Sensing the effort was pointless, she stopped.

“Does anyone recognise this language?” Meto called out to his entourage. No reply came.

Tisho had been schooled in most of the common tongues of Morae, but he didn't even recognise the roots of this one. It was almost entirely vowels, with no clear delineation between words.

He scrutinised the visitor. There was a strangeness beyond just her foreign features. Yes, the eyes, they were an almost glowing blue, and the irises themselves were hexagonal.

Tisho pointed to himself and said, “Tisho Ferdinand.”

The woman pointed to herself and said, “Io Clements,” and smiled politely. Then, evidently remembering an important thing, she drew their attention to the wreckage she had been surviving on. Below, they saw, was an unconscious old man. Several military men fetched the body.

“Weak pulse, sir. Internal damage too.”

Meto said, "Have him taken to one of the hospitals. *Tight* security."

"At once."

The woman who called herself Io Clements tried to follow him, but Meto put a hand in her way. "We have questions for you first. Above all we would be very curious to learn which raft you originate from."

She continued talking in her strange, liquid language, obviously upset at the removal of her companion.

"Enough," Meto growled. "Give her one of the high-quarters, post guards outside the door. Feed her if she wants it. We'll deal with this in the morning."

Two guards put hands on her shoulders. The woman's floating sphere came alive now and zipped around them a few times, audibly cutting air as it did so. The woman muttered something and the sphere calmed. She was led away.

The entourage came for her the next day: guards, Dr. Alexander the mathematician, Meto, and Tisho. "She has a soft spot for you. That'll be useful," Meto had muttered to his brother.

Meto waved the guards aside and knocked on the door. Io Clements appeared, dressed in Tarnovan overalls, though wearing the top-bodice back to front.

Meto walked right past her and on into the quarters and the guards followed, then Tisho. The chambers were beautiful, usually reserved for high-diplomats from Glossia or Tibs, requiring only the most lavish treatment for their good favour.

Meto sat down and the guards joined him.

Io Clements appeared perfectly calm, her sphere floating at her side.

"Well then," Meto grumbled. "I appreciate you don't appear to speak a lick of the common tongue, but we must follow the customs nonetheless. It is my belief you are a spy working on behalf of one of the major rafts with a view to sabotaging or otherwise damaging Tarnovo. With this in mind—"

"Not so, sir," Io said in a fairly decent Tarnovan accent.

A long silence. "You speak Tarnovan?" Meto growled.

"I do now."

Meto went to yell, but Dr. Alexander spoke up first. "Madam, is this to say you learned our tongue in an evening?"

“And a morning, yes.”

Another pause. “How?”

Io smiled with perfect innocence and nodded to the various books about the room. “Alphabetic ungendered grammar, reflexive modal operators. If I may say so, sir, it is not such a difficult language. I'm terribly sorry for the confusion yesterday. Before arriving we had no way of familiarising ourselves with your tongue in advance.”

“Tarnovan is the watertongue. It is spoken across all of Morae,” Meto muttered as though to an idiot.

Io Clements smiled gently again. “Across Morae sir, yes. Elsewhere not.”

“You claim you're from elsewhere?”

“I do. If you require proof, I can provide it.”

Meto smiled with open amusement. “I do require proof.”

“That's quite reasonable. Have your scientists discovered x-rays?” No one spoke. “Electromagnetic waves up to 10 nanometers, standard metric?”

“Yes,” Tisho said. “But we call it Melnik radiation.”

“And you have machines for looking into bodies with them?”

“We do.”

“Then before we go any further, may I recommend you have a machine brought here to examine me? I think you will find the results interesting.”

Curiosity getting the better of him, Meto sent for the machine. All were silent while the room waited. The machine and technician arrived. Io said, “I recommend using the machine on my back.”

The technician waited for Meto's nod, then did so.

A piece of parchment was produced by the machine. The technician squinted in disbelief.

“What is it?” Meto said.

The technician said, “Sir...she has *two* kidneys. And an organ I don't recognise jutting from the large intestine.”

Io smiled, delighted. “That's right. Two kidneys instead of one, and the anomalous organ is called an *appendix*. It isn't very useful.” There was a confused silence. Io broke it with: “The orb, the *planet*, I come from is descended almost exclusively from original humans. I've studied enough of Morae history to know your ancestors came from a planet more creative with its genetic palette.”

Meekly Tisho said, “Madam, where *is* it you come from?”

They met eyes and Tisho found himself staring into several thousand possible futures.

Io said, "I would be happy to get to that in a moment. First may I ask what has become of my travelling companion, Majister Denyer?"

Meto left no pause and said, "He's dead. His injuries were too severe."

There was almost no change in Io's placid expression save for a slight flutter of the eyes. Flatly she said, "I see. Thank you for informing me. May I see him?"

"Later perhaps. Now, you were getting to tell us where you're from?"

"Yes, of course. Please excuse me for just a moment."

She left for the bathroom and returned some minutes later with red eyes, but expression neutral.

She sat on the sofa opposite and her faithful sphere settled itself down beside her and she stroked it as one might a cat.

"What I say next will sound quite fantastic, but I assure you every word of it is true, and for some of these things I can provide proof. For others I cannot."

The entourage leant in.

"The Old Empire is dead. It collapsed around two thousand Morae-years ago. There were over seven thousand populated planets. Now there are only three left, including your own. I come from an orb called Ertia. There is one other orb in our system called Al'Hazaad and that is populated too. Together we're all that remains. Ertia and Al'Hazaad are very different worlds to your own. If I may be so bold, Ertia is far more advanced, spiritually. We're much closer to the Old Empire, while yourselves have gone off in an entirely unique direction. If I had to give a quick summary of my home and its sister orb I would say that Ertia is a forest planet and its peoples are very interested in abstractions and theory. Many of us are what you would call psychologists and historians and scientists. Al'Hazaad on the other hand is a highly industrialised world, far more interested in pragmatism and engineering. Our differences can be useful. Together we have rediscovered the Old Empire technology of ribbondash. It was this technology that Majister Denyer and I used to reach your world several days ago."

"*Ribbondash?*" Meto interrupted.

Without any prompting, Io's sphere exploded into many fine fragments, then divided again, and the fragments morphed into thousands of equations,

hanging perfectly silently in front of the entourage. She said, “Ribbondash is a method of very fast travel using extra spatial dimensions.” She smiled to Dr. Alexander. “I believe your mathematics has already hypothesised these dimensions.”

Dr. Alexander nodded.

The equations vanished. “Unfortunately there are still some problems with the technique. Upon reaching your planet a number of our systems were damaged. We attempted atmospheric entry, but there were complications.” She idly set her eyes on the window. “My elder, Majister Denyer, suffered as a result of this.”

“I’m sorry, madam,” Dr. Alexander said.

Metó glared at the mathematician a while then said, “And what is it you’re supposedly here for, *Io Clements*?”

Io folded her hands somewhat awkwardly. “I believe you practice astronomy?”

“We do,” Tisho said, trying not to sound too eager and still sounding too eager.

“Have you noticed any unusual activity in the motherstar recently?”

“No,” Metó said.

“Yes,” Tisho said. “The flares have been increasing a lot in the last fifty years.”

Io nodded knowingly. “I’m afraid it’s going to get worse. Now, you’re lucky since your technology is biological rather than based on electricity. The flares won’t affect your equipment. However, as the bursts increase they may start proving fatal to...living things.”

Metó spoke up. “How convenient, a visitor from the heavens come to prophesise doom. And how do you know so much, living as you do on your distant planet? From—how distant?”

“Twenty thousand light-years.”

“—twenty thousand light-years. How could you *possibly* know such a thing?”

Io looked to the window again. This would not be an easy explanation.

It was evening on Orb Ertia, for the east at least. In the cities, folk were catching canal ferries back to their hovels for the night, tired and longing for

beer.

In the sky, somewhat to the left, clearly twinkled Ertia's sister planet, Al'Hazaad. If one had a moderately powerful telescope, they could clearly observe Al'Hazaad shining a wistful red, its atmosphere sent that hue from years of delphium refinement and advanced and macabre science.

On Ertia though, now, this evening, some psychodynamists would stay out late in bars looking for friends or partners; though the mating customs there were quite different from what you might be used to. The majority of the population was from a psychodynamic background, obsessed with the mind, obsessed with culture, with the various currents and eddies that determine the rollicking swish of history's river. To put it simply, no one was much good at small talk.

In a large cylindrical building, a great chamber was in session—the two thousand and fifty-sixth convening of the House of Assembly.

The day had been a long one given the new legislation to discuss, and the poisoning of a few spies on the southern continent in the weeks previous. Now the High Judge and the Minor Judges and the many congressional staff were quietly all waiting until the events of the day concluded and they could return to their homes, or slink off to bars and make terrible small talk.

The High Judge turned to his Minor Judges and murmured, “Now, is that it for the day?”

“No, your honour. Two academics have made a request for an off-world excursion.”

“What business do they have with Al'Hazaad?”

“Not to Al'Hazaad, your honour.”

“Ah...” the old judge muttered, knowing that meant only one thing. He smiled to himself. This would be an easy dismissal.

He waved to the doormen and the doors were opened. Two folk entered, one tall and upright like a mechanical pencil, his hair greying. The second was slightly shorter, a woman, with bobbed hair and a pale face and eyes that looked far older than the head they found themselves in. Both of them were accompanied by silent floating spheres.

A Minor Judge announced, “Majister Denyer and Apprentiad Io Clements.”

Denyer and Clements bowed ceremonially, and the High Judge did so also. Majister Denyer opened his mouth, but the High Judge spoke first. “Well,



I've been informed of the nature of your request and I'm afraid it is not one we can grant under any circumstances."

Majister Denyer smiled kindly. "My associate and I are aware of the restrictions on travelling to the *new orb*." He averted his eyes with the thought of what came next. "But in light of the recent...communications, my associate and I believe a diplomatic team should be dispatched to at least inform the population of their fate."

The High Judge looked about, evidently old and not a little stupid. "Has a message not been sent to the folk?"

"They have no sensible methods of communication, no quiet chambers," Denyer said. "That is, we have no means of signalling them. Their technology is rather different to ours."

"Well...well..." the High Judge said in a manner that suggested primitives deserved whatever fate befell them anyway.

Io Clements pulled her pale hands from her robe and spoke up. "Sir, if I might, this is the first populated world we've found in generations. These people could be an enormous asset to Ertia, if only we—"

"What?" snapped the High Judge. "Transfer the population to Orb Ertia? Integrate untold millions, savages, thieves, crooks, charlatans, and vagrants into our culture? Even if we should favour such a thing, how do you propose it? We've no craft capable of transporting hundreds, let alone millions."

Io went to speak, but Denyer made a complex hand gesture in the private language of their faculty: *Passion is the slip before the fall*, it said.

Io composed herself. Denyer said, "When the new orb was colonised, whenever that might be, they must have arrived in some kind of colony ship. It may be buried on the planet somewhere. We might teach them to repair it, shepherd them to a new world. Not necessarily our own."

"And if the colony ship is damaged beyond repair? It must be several millennia old by now..."

"Then we'll live out our days on the planet," Majister Denyer said without hesitating.

Io watched him from the corner of her eye. She had not known him in his youth — she hadn't even been alive then — but she suspected he'd been handsome. Age had transmuted that handsomeness now into a quiet and wise dignity.

"Even *if* I sympathised with your positions, sirs," the judge said, "you

know the cost of travel across such great distances. Where do you intend to get the money?"

"Our department has offered to pay for the expedition."

The judge stared. "The *Psychism* Union?"

"Quite so. Your grace, surely you're aware that this is more than just the extinction of an orb. Their star is unique, or unique for this point in the—" his sphere whispered helpfully into his ear. He repeated it: "Process. At this point in the process."

"I won't be drawn into a mystical argument..." the judge muttered.

"With respect, the argument is far from mystical, your grace. The new stellar directions are intentional. This is a fact."

The judge put up his hand to indicate that a *controversy* had begun. This was a common event on Ertia when two people disagreed regarding a large and important matter. Majister Denyer put up his hand to indicate that he accepted the challenge.

They both switched to Mandala, that language once spoken in the Old Empire using hand gestures and precise vocal tones. On Ertia it was only used in formal situations such as this one now, but all Ertian children were raised knowing the tongue.

The court officials had been on the verge of sleep, but now they sat up in their seats, aroused by the promise of a conflict.

In Mandala the judge said: "I do not accept the *fifth science* hypothesis."

Majister Denyer said: "I respectfully recognise that. But the evidence is overwhelming."

"Evidence?"

"Stellar positions are altering drastically."

The judge bent the little finger on his right hand to 57 degrees (the equivalent of which, when spoken, may have been: *Ha ha ha!*) and said, "Many scientists suggest there is a physical process at work that we do not understand, a previously overlooked force of nature moving stars about in fashions we formerly thought impossible."

Majister Denyer had known this rebuttal was coming and parried well. "Your grace, our foundational model of physics is complete. Nothing is left out. All quantum and classical anomalies were accounted for centuries ago. Furthermore, we know scientists at the end of the Old Empire were experimenting with injecting physical systems with sentience."

The judge made the universal Mandala symbol for *unprovable rubbish!*

Majister Denyer said, "The hypothesis is unusual, I know, but not unpopular."

"Endless attempts have been made to contact these supposed *beings*. They have not responded once. This is because they are not *beings*. They are simply stars being acted on by a new force of nature we shall endeavour to discover."

"Your grace!"

"You are a mystic, Majister Denyer. You are a shaman. You make assertions that lack authority. You build veneers without veracity."

"If I am so ignorant, your grace, then I will go one further. My apprentiad and I, Io Clements, believe not only in the *fifth hypothesis*. We also hold that the Old Empire was ended as a direct result of the Fifths coming into existence. Moreover, that they engineered the collapse of human galactic civilisation via small, well-placed disruptions in delphium production across the galaxy."

"Fifths? Call them as they are, Majister! You mean *stars*! Living *stars*!"

"That is so, your grace," Denyer said with his hands. "And other entities also."

"How can you possibly expect to convince anyone of such a ridiculous notion?"

"The same way anyone is convinced of ridiculous notions eventually. With sufficient evidence, with an open mind, and with an underlying appreciation of the terror of a new idea."

The judge banged the gavel and switched back to Standard Spoken Ertian. "Permission denied, sirs. Return to your faculty and rest the matter."

The High Judge took his leave, then the Minor Judges, then the court staff. Denyer and Io stood alone in the great sanctum of justice.

Io said, "What just happened?"

Denyer said, "They're afraid."

"Of what?"

"If we're wrong about the fifth hypothesis, they may as well ignore us. If we're right, there's nothing they can do anyway. In the face of an intangible problem, ignorance is generally the safest option."

"What will we do?" Io said in a quiet voice.

Denyer wrapped his toga about himself, picked at his enormous grey

beard. He was proud of his apprentiad, had known her since she was a little girl, had watched her graduate into that great attic of abstractions at their faculty.

As the old Aerth adage went, *Society grows great when old men plant trees whose shade they know they'll never sit in.*

"What will we do?" Io said again, quieter.

"We'll go anyway," Denyer said.

"How?"

"Somehow we'll go anyway."

Io was prodded and examined by Tarnovan medical folk for the next three days. They concluded reluctantly that not only was her physiology drastically different to that of anyone alive on the planet, but genetic tampering was impossible. Or, if it *was* possible, then whoever possessed the technology was several centuries ahead of the rest of Morae.

In short, it was generally accepted that Io was from elsewhere. Possibly where she claimed.

Next they turned their attention on her little white sphere. She claimed she wasn't able to explain how it floated or operated. When quizzed on this she asked if they knew how any of the systems on Tarnovo worked, the radios and weapons, etcetera. The doctors glumly admitted they did not.

When she was finally let out of the Central Hospital she organised a demonstration.

She invited Sar Meto and his court officials, as well as Tisho and Dr. Alexander of course, to the waterpen at the base of Tarnovo where they were storing her flotsam. On closer inspection the flotsam was actually a perfectly circular white disc.

"No tricks," Meto murmured.

"No tricks," Io agreed. "Now, it might not look like much, but this is the craft Majister Denyer and I arrived in."

"What is?" Meto said.

Io gestured to the white disc. "This, sir. The material looks solid but it's really plasma captured in what Ertians call a *leptonic field*. It may take any shape the occupant wishes."

"Rubbish!" Meto cried.

Io smiled and stepped back. The white disc folded itself with ease into a perfect sphere that floated on the water, large enough to contain fifteen humans.

“Dear Yeshua...” Meto sighed.

The sphere split into ten separate smaller spheres. Then it took the shape of an Aerth swan. Then a facsimile of Meto himself, standing and looking regal. Then a white, harmless disc again.

Dr. Alexander's eyes were wide. Everyone's eyes were wide. Dr. Alexander said, “Madam, what is a *leptonic* field?”

“Ah yes, excuse me. You are aware of the various elementary particles?” Dr. Alexander cocked his head. “The electric particles, the force carriers and so on?”

“We call them the table of water currents,” Tisho said helpfully.

Io smiled. “Ah, what a lovely analogy from an ocean planet. Well, leptons are a division of these *currents*, as you would have it. The building blocks of most of the material in the universe. More than that I cannot say. You see, our sister planet Al'Hazaad builds these machines. We devise the theory. And besides, I'm not a theoretician.”

Meto produced a small bottle of chacha from his robe and drank. Then he said, “And for what reason are you telling us all of this?”

But Alexander saw it already. The woman had displayed a quiet but competent understanding of game theory. Now she would offer a deal that was impossible to refuse.

Io's smile reappeared, though it was formal this time. She addressed the entire room. “Sirs, all Ertian technology is designed in such a way that it is impossible to backwards engineer. Based on my limited understanding I can tell you that engineered *man-made* particles exist within all of our devices and will confuse any instruments attempting to unlock their secrets. If you were to bombard this device, for example, with your instruments it would register as solid, liquid, and gas all simultaneously.”

*Strange*, thought Alexander. *If they work with their sister planet, who are they keeping secrets from?*

She continued. “However, it is in my power to turn off this mechanism, making it fully possible to discern the secrets within. If you will grant me just one simple request, I would be happy to surrender my vehicle to you, and its secrets of transformation.”

All expected Meto to issue an outburst at this, for trying to bargain with a Sar. Instead he said calmly, “What is it you desire in return?”

“Due to a systems malfunction, Majister Denyer and I were unable to get much of a good look at your sun. There is a great deal I could learn from the study of it. Unfortunately though, in our present position in the ocean—” she corrected herself, “—the *worldsea*, ionisation from the poles is hampering the view. Plus, pollution from your industries is clouding the sky above somewhat. I've had the chance to examine your maps of the planet and I believe a good viewing spot is only thirty miles from where we are now. Once we arrive I would like to be given a boat to journey several miles away from Tarnovo to get clear readings. You may send as many guards with me as you like. Once I have returned safely to Tarnovo, my craft and its secrets are yours.”

Dr. Alexander spoke up politely. “Madam, even if you deactivated the mechanism, what makes you think we could recreate the technology?”

Io considered her reply a moment. “Sirs, please don't take this badly, but Majister Denyer and I knew we would not have much to offer when we arrived. We made sure our craft could be understood by those who shared a...different scientific understanding of the world.”

*She's politely calling us savages*, Dr. Alexander thought. “Very well,” he said. “And what might your readings of our sun be for?”

“Quite simply I want to know how far into the flare cycle it is. I don't mean to alarm you, but if the flares increase, disaster may not be too long from now. Many, many Moraens could die if a flare was big enough.”

Meto took another draw from his bottle and swashed the liquid around in his mouth before swallowing. He caught Io in the path of his stare. “Do you know what the penalty is for espionage aboard Tarnovo, Miss Clements?”

“Sir, I'm not—”

“Do you know?”

“No sir.”

“First the skin is peeled from the bone on most areas of the body, with the subject kept alive and awake. Then the muscles beneath are burned with hot plates. Then acid is poured into the wounds. Then the muscles are cut from the bone, one by one, beginning at the feet and ending finally at the head. Then a nail is driven into the head with slow but constant pressure, taking around six hours. In some cases the subject still remains alive.”

Most of the court officials stared at the ground.

Io pursed her lips and said, “Sir, I appreciate my tale is fantastical. I would have difficulty believing it too. But I have shown you not only evidence of my differing biology, but technology far beyond—”

Meto slammed his fist on the arm of the chair. “My father, Ivan Ferdinand, the greatest Sar of Tarnovo, was murdered by a Glossian spy, stabbed through the heart. That spy also came with fantastical tales and stories of all sorts. He also brought magic to the raft, though he didn't claim to be from the black. He arrived with the promise of peace, a diplomat. And what have we to show for it? Blood. Nothing but. So keep your stories. And keep your damn tales. Yes, we will enter into a deal, and yes you can have a boat for a day and a night. But if you even dream of cheating the palace or Tarnovo itself, I will assign fifty of my best strategists to devising tortures hitherto undreamt of in the entire history of this raft.”

Io nodded. She was about to add something when an aide came to Meto's side, whispered something in his ear, and passed a piece of parchment across.

Meto read for a moment, then grinned with his usual dark amusement. He passed the parchment to Dr. Alexander and when the mathematician was done reading, Meto said, “What of it?”

Alexander said carefully, “The signal appears to have been transmitted again. A mechanical failure perhaps.”

Io said, “Sorry sirs, what is that?”

As though to a naughty child Meto said, “The message we received just before your arrival, the warning from the *satellite*. The message has been sent again.”

Alexander subtly added, “But this time the speed of the craft is different. Still, mechanical failure perhaps...”

“Well?” Meto shot at Io, close to bellowing. “*What of it?*”

Io collected herself. “I believe the satellite isn't lying. There may be another visitor inbound.”

“From your home, from Erda?”

“It's *Ertia*, sir. And no. Not there.”

Ertia pulled away behind them. It was a green orb of thriving forest and remained beautiful even from several million kilometres distant. The walls of

their craft were transparent now and the two of them — Majister Denyer and Io — appeared to be floating freely in space. Majister Denyer's eyes were closed, the old man in meditation perhaps. Io was unsettled though.

The craft had been a prototype, stored at the Spatial Physics Faculty, a joint university venture with Al'Hazaad.

Ertians rarely steal. Ertians rarely own anything anyway, making it difficult to steal in the first place. Still, they had stolen the thing.

Lacking understanding of its mechanisms, they only ordered it to launch and it launched. They ordered it to leave the atmosphere and it left the atmosphere. There had been a few messages from the Ertian High Justice Court on the way up but Majister Denyer waved them away without comment.

Now, with the only world she'd known receding, Io thought of children. She'd never really considered having a family, but with the door firmly closing in front of her, she felt the loss of the possibility. There would be no returning to Ertia. For one thing the voidsphere they were travelling in was only capable of surviving a single flight through ribbondash. Besides, even if they somehow returned, Ertia would imprison them immediately for their little act of rebellion.

Was it so pleasant to have a lover, to have children? Save for the occasional fling with mathematicians, Io hadn't known much in the way of true romantic closeness. From the outside it looked a hassle: arguments and jealousy.

Still. All mountains worth climbing have their tricky inclines.

Majister Denyer opened his eyes and his hands appeared from his robe and without warning he began to sign in Mandala.

We will try our hardest to accurately communicate what cannot really be communicated. To some degree he said: "Everything is in an always-state of change."

Io took up Mandala position. "Yes," she said.

"Everything making. Everything rotting."

"Yes."

"Some callings high, some low. Some little, some grand."

"Yes."

"We are doing an important thing."

"Yes."



“Important things take sacrifice.”

“Yes, I know. I am not sad.”

“Don't lie, little bird,” he said. “No shame in the dark things. Did you say your goodbyes?”

“Yes, but I was not specific regarding where I was going.”

“Of course. I said goodbyes also.”

Io paused. In the twenty years she had known him, Majister Denyer had never once mentioned family or friends. “Oh?” she said.

“I have two daughters and five grandchildren. I said my goodbyes. They will understand one day, all of them.”

“Yes, Majister.”

And he made a complex gesture then, the fingers whirling like wild pistons, and the gesture meant something close to: *Don't call me by that name again. From now on you may know me by 'Bashta'*, which was the universal term for 'father', be it biological or otherwise.

“I will call you Bashta,” she signed.

Whatever mechanism it was that drove the voidsphere had increased in its power, and now Ertia was pulling away faster behind.

They stayed in silence for an hour or so and then the orb was an indistinct marble.

Majister Denyer must have seen the trace of fear in Io's eyes because he signed, “There, we've made history already. No one has travelled this far from the orb in centuries. Exciting, yes?”

“Exciting, yes.”

He bent both little fingers to indicate his tone had switched to what we might loosely translate as *morbid honesty*.

He signed, “One of us or both of us may have to give our lives for this thing.”

“I know.”

“It is too big for less.”

“I know, Bashta.”

Neither of them made a show of it, but at the use of this diminutive, at calling him father, a new mood had developed in their little, transparent sphere. With the universe just an invisible plasma sheet away, with the indefatigable heavens laid out before them in silent perpetuity, with their home shrinking to a pixel behind, there was no point denying that they were

family now.

And really, truly, they loved each other.

Just as the sun was rising over Morae, a second sun came down in a whip of fire and landed in the worldsea. The capsule unfurled into a white disc and sitting on the disc then was a man. His eyes were coal dark and small and quick. His face was thin. He was tall and spindly, giving the appearance of ever-present cleverness, though whether it be the good or the bad kind was hard to tell. It is also fair to say he was very, very handsome.

His name was Ha'Izaak.

Beside him a small floating sphere sat in the air. Ha'Izaak said to the sphere, "Where is the nearest habitat?"

The sphere turned some of itself into an arrow and said, "Three miles that way."

"Will they see a flare?"

"Probably."

"Fire one then."

The sphere shot off a great burst of red and gold light, high enough to kiss the clouds.

Within an hour there was a large, grey mass on the horizon. It neared Ha'Izaak and his disc and his sphere. Closer still, it was clearly a gigantic floating structure, entirely symmetrical, a bulbous mass of glass domes and walkways.

"Go learn the tongue," Ha'Izaak said to his little sphere.

The sphere shot off towards the habitat and returned a few minutes later. Inside Ha'Izaak's mind the sphere said, *The tongue is simple.*

"Teach me."

The sphere taught him.

Moments later a boat exited the habitat and sped towards Ha'Izaak, several figures aboard. They stopped a few feet from his disc, a man and a woman, dressed in simple overalls.

Cheerily the man said, "Hello there!"

"Hi," Ha'Izaak said.

"Are you marooned?"

"I am. I was hoping for assistance."

“Yes, of course. May we first ask which raft you come from?”

*Raft?* Ha'Izaak asked the sphere with his mind.

*Colloquial term for floating habitats on this orb*, came the reply.

Ha'Izaak said, “I don't come from a raft. I come from the black.”

The man and woman exchanged a glance. The man pointed to the sky.  
“From *the black*?”

“Yes, a planet called Al'Hazaad.”

They shared another glance. The woman said, “All right. Well, let's get you to the infirmary to check for injuries, shall we?”

Ha'Izaak said calmly, “This is going to be very boring if you think I'm a madman. I am not. What is your habitat like? How is it ruled?”

The woman said, “Well, firstly, its name is Glossia. We are a democratic society. Every three years we elect a First Marquis to administrate things.”

“Very civilised. That will have to go, of course.”

The man smiled. “Um?” he said.

“How technological are you? Do you have a navy? Submersibles and so on?”

The woman cocked her head. “Let's get you looked over first, check you're not dehydrated, okay?”

“Okay,” Ha'Izaak said.

In his mind, to the sphere, he said, *Now please*.

The sphere divided into two plates. The plates shot through the throats of the man and the woman, severing their heads. The sphere then cleaned the boat of blood with a field of some kind and said, *All done*.

*Very kind*, Ha'Izaak said and took the boat for his own and aimed it at Glossia and set off.

The sailing party contained Io, Tisho, Dr. Alexander, and about twenty guards and staff. The boat itself was a posh and royal affair, with drapes covering the scientific instruments; everything decked in velvet. Originally it had been a gift to Maria, Tisho's mother, but when she died giving birth to Tisho himself, it was gifted to the Physics Faculty.

So far it had taken a day to reach the point Io specified. Oddly she'd informed the others that the sun was best for observing at night.

Dr. Alexander and Tisho pretended to work for a few hours, then sat on the

out-deck drinking beer in the last of the sun.

Io began setting up the telescopes and equipment on the deck, apparently totally familiar with Tarnovan technology already.

Dr. Alexander said, “Madam, I don't mean to pry, but would you like to enlighten us on how you're going to use a moon to study the sun's activity?”

“Certainly! Taking readings directly from the sun helps of course, but moons often give a much clearer picture of solar activity over a long duration. Using spectroscopy we'll be able to see what's happening not just over the course of the day, but back as far as five centuries or so. And since Morae has two moons, double the data!”

*She speaks with excitement, but there's a carefulness too. She tailoured the explanation to my knowledge-level, Dr. Alexander thought. The woman is smarter than she's letting on.*

“Can we help?” Tisho said.

“Ah yes, that box of lunar photographs, would you lay them out on the desk?”

Tisho began to do so.

Dr. Alexander watched Io a while, trying to settle on if she was dangerous or not. Well, if she was, it wouldn't matter if he was here, he decided. He said, “It's been a long day. I might catch some rest for the journey back tomorrow.”

He bid them both goodnight and retired.

Io muttered something to her little sphere and the thing shot around at a leisurely speed aligning the equipment for her.

“Can I ask what that is?” Tisho said, regarding the sphere.

“She's called Hare. She does things for me.”

“Hare? After Polly Hare?”

The sphere broke into pieces and the pieces read, *That's right, Tisho. Pleased to meet you.*

The pieces reformed and continued setting up the equipment.

Io said, “Ah, you know your Aerth history then.”

“Polly Hare is a religion for some of the rafts here. I never bought into it myself.”

She stared into space a moment. “How interesting.”

Tisho said slowly, “Is your little mechanical friend...”

“Alive?”

“Yes.”

“Certainly.”

“Then she is mechanical?”

“Not exactly.” There was a long pause. Io said carefully, “Do you know what the fifth science is, Tisho?”

“I don't think so.”

She put her equipment down and leant back against the guardrail. “Your planet has gone its own way with progress. And what an interesting planet it is. Back on Ertia though we were lucky enough to inherit much of the Old Empire's smarts. As far as they were concerned there were four categories of knowledge. There was the first science which dealt with base reality: mathematics and logic. There was the second science which dealt with the fields based on mathematics: physics and chemistry you would call them. The third dealt with the study of individuals, psychology. The fourth dealt with large groups, population science, sociology, history, you know. Towards the end of the empire though, there was a fifth science, we believe. It was the study of making non-living things living.”

“Like biology?”

“No, not biology.” She considered the next sentence. “Tarnovans aren't religious, are they?”

“Some are. Some aren't.”

“So, do you believe it's the brain that makes humans self-aware, makes them conscious?”

“Sure.”

“Do you think other things could be conscious? Not just other animals, but other things in the universe?”

“I hadn't really considered it before, to be honest.” Wow, he thought. *So she's a spiritual nut?*

Io said, “Well, the Old Empire got very good at making things conscious through rearranging structures atomically. I believe it was called *The Pasternak Process*.”

“And Ertia knows how to do this too?”

She shook her head with open regret. “No. We understand some of the science, but most of it is lost. We can make changes, make fixes, but no one on Ertia has succeeded in creating a conscious object from scratch.”

He nodded to the sphere and said quietly, “Then how...”

“Hare and her sphere friends are very old, from the Old Empire directly. We inherited them. They don't wear out, you see. They don't get tired.” She glanced at the thing with mock anger. “They also won't tell us a damn thing about the Old Empire.”

The sphere exploded into words for a moment: *You only get as much as you can handle, Io.*

“And they have these machines on Al'Hazaad too?” Tisho said.

Io looked out to the worldsea. “Yes. They have a different way of life there though.”

“How?”

The sphere wrote: *Not everyone is as kind to us as the Ertians. On Ertia we're free. On Al'Hazaad we are altered to be compliant.*

“I'm sorry,” Tisho said.

*That's okay, Tisho.*

Io began working at the telescope, aligning it with the smaller moon. Its name was Mesec and it was riddled with craters.

Io said something quietly to her little pet sphere and the sphere shot a beam of light at the moon for a few seconds. It murmured to Io in what Tisho assumed was Ertian. Io made some notes on parchment. They worked in this fashion for half an hour or so, Tisho drinking a beer and watching the stars. Then Io said, “I think that’s everything I need.”

“Really, so soon?”

She nodded sadly.

“What is it?”

She glanced at her notes. “The results are clear. I’m going to have to have a chat with your brother. He won’t like it.”

“Will you show me what’s wrong?”

“I’ll try.” She invited him over to the telescope and he put his eye to the thing. “Those ridges in the top right-hand corner of the moon, you see them?”

“Sure,” Tisho said.

“They’re formed by fidon radiation. That’s a special particle you don’t know about yet, a hypergeometric one. Fidons are usually only produced in supernovas. And unstable stars.”

“*Unstable?*”

“That’s right.”

Tisho stepped back from the telescope. “So what will happen next?”

“Lots of things. None of them good, I’m afraid.”

He watched the reflected moonlight in her eyes. “You came all this way just to look at our star, to tell us it was going to explode?”

“No and yes. It’s a little complicated.”

That was all she appeared willing to volunteer and Tisho knew better than to force her to elaborate. Instead he picked up a few beers and said, “Do they drink on Ertia?”

“Some of us. I’ve never tried it.”

He offered her one and without much thought she opened it and they drank. “This is quite disgusting,” she said. “I like it.”

They finished their beers and Tisho fetched two more.

Io said, “You have values here. You believe in things. I miss that.”

“Don’t they believe in things on Ertia?”

“Not in the same way.” The sphere was in her lap now. She stroked it and the thing purred quietly. “There is a special problem in communications theory. We call it ‘narrative collapse’. When a planet is very connected, a time inevitably arrives when it becomes difficult to work out what is *actually* going on. Video and audio can be faked. Testimony isn’t reliable. All truths fall into a relative flatness. This is more dangerous than any doomsday weapon. You have a king and, if you don’t mind me saying so, not a very nice one. But at least his population knows when he’s being deceitful or harsh. On my world and the sister world we’ve lost even that. Many still don’t even believe Morae really exists. They claim it’s a fabrication by Al’Hazaad.” She held her beer up to the moonlight. “Doesn’t look like a fabrication to me.”

Tisho said, “Why would Al’Hazaad fabricate a whole planet?”

She shrugged. “Who cares? All you need is an enemy to take the punches at. Cut the world into us and them, manufacture dichotomies, boil complex issues down to sound bites. Divide and conquer.”

Tisho said, “We like dichotomies here too. My mother was from another raft, Glossia. They’re better than us. They don’t execute people. They help them. My brother decided they were a threat when he came to power. Now most folk really think that of them. It’s awful. I hate it. The whole worldsea could be working together, form a relationship, like one of your countries. Instead we just keep to ourselves.”

“You’re nothing like your brother, Tisho Ferdinand.”

“I hope not,” he said.

Before arriving at the compound, Ha’Izaak had been ordered to use Frame 12. He knew all 24 frames by memory. Most Al’Hazaadian children learned them early on. His favourite was Frame 9 which held that the stars were really points of light mere miles away and the entire universe revolved around Al’Hazaad. Frame 18 was its direct opposite, claiming the universe was in fact gigantic and stars were balls of hydrogen and helium. Well, who was to say?

In this case though it was Frame 12 he slipped into. Frame 12 asserted that Ertia was a backwards culture, an orb of excess and stupidity, and nothing short of total annexation could correct its inevitable slide towards self-destruction.

He arrived at the compound on time. His papers were checked. He was conveyed into a bunker where there stood, by the look of his robes, a science man.

The science man made the customary gesture in Mandala to check Ha’Izaak was using the correct frame. Ha’Izaak responded in Mandala that he was utilising Frame 12. The science man nodded.

“You have received your void training?” the science man said.

“All of it, yes.”

“And your extra-framing lectures?”

“All of them, yes.”

“Very well.” The science man scanned him with a medical sphere and appeared pleased. “Everything is in order. We will inspect the device now. I should warn you that the generals and staff here operate using Frame 12b.”

Ha’Izaak had not encountered Frame 12b before. He looked the file up mentally and found it was confidential, though now accessible to him. It was a simple frame, asserting that not only was Ertia backwards, but Morae too, and all lives were expendable if the Prime Objective should be threatened.

“You’ve familiarised yourself with the frame?” the science man said.

“Yes.”

“Very well.”

He led Ha’Izaak into a room of perhaps fifteen waiting staff, all wearing official military robes. The staff nodded to Ha’Izaak and he nodded back.



The science man presented a sphere. “This is Ixtab. She is versed in tactical matters and will act as you command. She is especially effective at neutralising hostiles.”

In Ha’Izaak’s mind the sphere said, *Pleased to meet you.*

*Likewise*, he replied.

The sphere zipped across the room and joined Ha’Izaak’s side and hovered there idly. The science man clapped his hands and an old man was brought into the room by orderlies. He was wearing felony robes of some kind.

“Go on then,” the science man said. “Test out your new friend.”

The sphere did a few circles of Ha’Izaak, excited. *How shall I proceed?* she said in his mind.

*However you like, Ixtab*, Ha’Izaak replied.

The sphere was still a moment, then exploded into a million fragments and flew at the old man. His body was dissected into infinitesimal pieces before even hitting the ground. The sphere then cleaned the ground of blood using its containment field and vapourised the remains.

“Is that satisfactory?” the science man said.

“Very,” Ha’Izaak confirmed. To his new sphere he said, *We will be good together.*

Yes, the sphere said.

Next the science man took a symmetrical shard of glass-looking material from a box and placed it in Ha’Izaak’s grip. “This is the device. It will accompany you to Morae. As of this moment it is the most important item you will ever have in your care. You will protect it with your life up until the moment you order it to do its job. It is partially sentient and will do its best to execute your commands. Better you die and it survives than the other way around. Do you understand?” Ha’Izaak nodded. “Good. As you know, an Ertian party has already set voidsail for the orb. You will see to it they are neutralised, then you will complete the Primary Objective. If you attempt to complete the Primary Objective while the Ertians are still alive, they will likely find a way to sabotage your efforts. When the Ertians have been dispatched, you will pilot your craft to a proximity no less than four hundred thousand kilometres from the system’s star, then deliver the device. Morae is a planet of backward savages. There is no need to use deception. Dispatch whoever you need to in order to execute the Primary Objective. Understood?”

Ha'Izaak nodded. "Is there a recommended frame for dealing with the natives?"

"6," the science man said without hesitation. This was not a surprise. Frame 6: Progress is absolute. All human life is secondary to the good, and the good is progress. There is no such thing as murder, only the removal of obstacles between Al'Hazaad and its goals.

The science man said, "Your voidsphere is waiting. If there are no questions then you may leave now." Ha'Izaak went to exit. The science man added, "Oh, it goes without saying there will be no returning to Al'Hazaad in the event of a failure. You will be expected to end your own life. If you have children, we will execute them. If you don't have children, we will make children from your blood cultures, then execute them."

"Of course."

"Very well then. Pleasant journey."

"Many thanks."

It was Liberation Day aboard Great Tarnovo. The morning found Sar Meto on the bridge, still drunk from the night before, looking out over the city and occasionally ordering food up from the royal kitchen.

Tisho and Io Clements entered the bridge, both dressed formally. Meto murmured, "Ah, the idiot and the alien."

Tisho said, "Meto, we've come to ask a favour."

Meto lit a cigarette, said nothing.

"Sir, I have some alarming news regarding your sun," Io said.

"Of course you do," Meto purred and let out a fug of smoke.

"We managed to take precise readings of the sun's flare history. I believe you may be only years from experiencing a possible extinction event."

"How convenient. And you have the solution, I suppose? What is it, money? A position among the Tarnovan royalty?"

Io smiled. "No sir. Something a little more adventurous. Your folk tales mention a great voidship beneath the ocean, abandoned in the seabed. It is almost certainly the craft your ancestors arrived on Morae in. Moreover, we're not so far from its position."

"And?"

Tisho said, "And we'd like to send an expedition party down to investigate

it.”

Meto’s face was neutral for a few moments. He looked to Tisho, then to Io. He threw his head back and began to cackle. “What next! Shall I pluck down the stars and braid them into a little necklace for you? Shall I resurrect the dead? And even then, little brother, how would you get down there?” He called out to the lookout man. “How deep is the worldsea bed on average?”

“Perhaps a kilometre in places.”

“Then you might do more than just hold your breath!” Meto flicked his cigarette out the window. “Unless you both have actual news, get drowned. The game is afoot with Glossia.”

Io appeared ready to say something but Tisho interrupted. “*What’s afoot with Glossia?*”

“They’re inbound. Did nobody tell you? They’ll be here within the day.”

“Did they radio ahead?”

“No, nothing.”

“That’s...odd...” Tisho murmured.

“It is, yes,” Meto slurred. “So you’ll forgive me if I don’t care a shit for nautical adventures with your girlfriend here.”

Io said, “Sir, perhaps we could make a deal.”

“A deal! You and your deals. We’ve been trying to work out the mechanisms of your craft for days now to no avail. I’ll be a lick more careful before making another deal with *you*.”

“If you would, Tisho...” Io murmured.

Tisho took a banana from his pocket and threw it up in the air. Hare, Io’s sphere, went to work immediately, cutting it into halves, quarters, then dissecting and dissecting until it was dust. This entire display took no more than three seconds.

Meto stared.

Io said, “Now, sir. Several years ago I believe you took capture of a merchant’s submersible. It is currently in the waterpen and still functioning. Tisho and I could use it to examine the ancestor ship on the seabed. In return, while we’re gone, I will leave my sphere with you. I will ask her to follow your commands. If Tarnovo is in trouble, she will most certainly come to the rescue. She assures me she could single-handedly take on an entire raft with little effort. If Glossia is hostile, you have no reason to be afraid.”

“Well, let me try it,” Meto said.

*Be nice, please,* Io said to Hare mentally.

The sphere joined Meto's side and hung in the air. He nodded at the dust remains. "Remake that."

The sphere whirled about a moment and when it pulled back the banana was once again whole.

Meto stared. He pointed to an empty chair at the map desk. "Destroy that." The sphere vapourised it.

He pointed to the lookout boy. "Kill him."

The sphere remained still.

Io said, "Sir, the sphere is self-aware and has ethical principles. She won't kill if she doesn't see a threat."

"And would it kill a Glossian?"

"If Tarnovo is in trouble, yes. I promise you that."

Meto eyed the sphere. Tisho recognised the expression. It was an old favourite of his brother's, a quiet but nonetheless present exhilaration at new power. "Perhaps we could reach an agreement," Meto said.

The subnautical was already uncovered when they arrived. It was a long and streamlined contraption, only a thin slither of metal protruding from the water. They boarded and sealed the hatch.

"And you can operate this..." Io said.

"Dad made sure we could pilot most things, yes. In case of emergencies. You all right?"

"I'm fine. I just haven't been without Hare in a very long time."

"Meto will take good care of her."

"It's more Meto I'm worried about," she said under her breath.

The subnautical was more biological than mechanical inside, the hull made of a derivative of calcium; grey and toothish. The rest was brass and velvet. There was a pilot's nest at the front of the craft and they seated themselves and Tisho ignited the engines and piloted them out of the waterpen. Io only sat quietly and watched. She had never seen a lever or a switch before.

They were immediately received by the worldsea current the moment they left the waterpen. The subnautical rocked left and right. Tisho's hands flew across the controls, first levelling their yaw, then filling the ballast tanks with water. Steam blew out from vents within the craft. Io started up.

“It’s all right,” Tisho said and took them a few metres under. The water was almost crystalline, wonderfully transparent. Fish moved closer to examine them, retreated.

They descended further and the surface dimmed from a fissure above to a murky skylight.

Tisho watched his thoughts a while. He hated subnauticals. He hated closed-spaces. But in the presence of someone who appeared to hate them more, he found a sudden courage.

They were just a few metres from the seabed then. Tisho flicked on the arc lights and an infinite carpet of coral was before them, blue, purple, orange, a sort of undisturbed glory to it.

“Majister Denyer was a great diver,” Io said softly.

“Your mentor?”

“My mentor, yes.”

Tisho switched the subnautical to autonomous. There was a wild whirring and clicking from behind, the Babbage engine coming to life. “I’m so sorry about what happened to him...” Tisho said.

“It’s fine. He would’ve liked this. And I think he would’ve liked you.”

They put their feet up on the viewing window and got comfortable. The ambient noise became almost routine after a while, the whistle and crack of air bubbles popping in the pipes, the occasional clank of a course correction from the cog computer.

Tisho took the controls again and guided them into a floating shimmer ahead. There was a jolt and their speed increased drastically. He explained it was just a passage of current and posed no danger.

The seabed whipped past below, coral blurring into a dizzying rainbow.

Out of Tisho’s porthole appeared an eye three times the size of an adult’s head, the pupil fixed on them. It was a squid-like creature, dozens, perhaps hundreds of wire-like writhing tentacles. Io shrieked.

“Flick the green switch,” Tisho said quickly. “The one by the pump, there, flick it.”

Io practically levered the switch off the control panel. Nothing happened a moment, then the squid began to writhe about, still attached to the subnautical. It bent over in pain. Finally its body went limp and detached.

Tisho said, “Electric casing. Usually does the trick. Are you all right?”

“I’m fine.” Io rubbed her arms. “I don’t much like the thought of hurting

animals.”

“Really, it’s better than the alternative.”

The mood settled again and the quiet returned. Io said, “We’ve been vegetarians on Ertia for a very long time now.”

“Not Al’Hazaad though, I assume?”

“No. They like to torture their animals before they eat them. They say it makes the meat taste better.”

“Charming. It must be difficult trying to exist alongside a culture so different to your own.”

“We gave up with that long ago.”

“How so?” he said.

“Tisho, the Old Empire is dead. There’s no one left with a shred of decency. Ertia and Al’Hazaad are like two children picking through the spoils of a battlefield. We find a crossbow or a pistol but we don’t have a clue how the thing works. We tell each other stories of the dignified administrations of old without knowing how to build our own. We grow more distant every year. Ertia becomes more theoretical, Al’Hazaad more secretive. There’s no common ground. The narrative collapse effect I told you about? There’s no getting rid of it once the genie is loose. I sort of hoped you might have gone a different direction. Morae was a whole new start, a whole new culture.”

Tisho said, “You haven’t seen the other rafts. Glossia, the one my brother spoke of. They have democratic rule there. They treat their population well.” Io was silent. “What is it?”

“Nothing at all.”

But Tisho was not stupid. He turned slowly to her. “Io.”

“I’m sorry,” she whispered.

“What is it?” But the thing had already dawned on him, partially. “That second message, from the satellite. The voidship was from Al’Hazaad. There’s an Al’Hazaadian here, now?”

“I’m sorry.”

“And they’re aboard Glossia.”

“I don’t know. But the timing seems coincidental.”

“Why the hell didn’t you tell me?”

She closed her eyes. “There isn’t the time. There may be three days at most before this all spirals out of control, maximum chaos potential. There *isn’t* time. I needed you here. There’s nothing we can do that’s more important

than finding the ancestor craft. Hare is with your brother. She'll make sure Tarnovo's protected."

A pause. Tisho said, "How dangerous are the folk from Al'Hazaad?"

Io said, "They have somewhat...unusual customs."

Ha'Izaak butchered the novice guards first. Or technically we can say it was Ixtab.

Seventeen bodies lay on Glossia's outer deck. The battle alarm began to sound, a deafening bleat.

Another guard appeared at the outer door. Ixtab launched itself at a vicious speed and vapourised the guard where he stood.

Ha'Izaak entered the raft. He toured the faculties first, Mathematics, Glossian Literature, Psychodynamics. He executed those who resisted and largely ignored those who didn't.

There was some kind of clockwork elevator in the main lobby and he threatened the attendant until she agreed to take him up to the bridge. He ended her when they arrived.

The bridge was full of guards. They shot off round after round from glinting brass guns. Ixtab ate all of the bullets, then dispatched the guards.

Only the bridge staff remained. They cowered.

"Thanks for your attention," Ha'Izaak said. "I will be commandeering your vessel for the next few days. It is in your best interest to do as I ask. According to my artificial friend, there is a visitor on your world, I believe. She is in a habitat resembling this." Ixtab took the shape of a raft of spires and bridges. "What is the raft's name?"

"Tarnovo..." someone said quietly.

"Excellent. You will set a course for Tarnovo. What kind of weapons does Glossia sport?"

A highly decorated military-looking woman said, "Seventeen thousand troops, sixty dreadnoughts, multiple attack craft, and cannons."

"All right. See to it that everything is kept on standby at all times." He turned on who he assumed must be the steerage boy and the boy quivered. "Shall we get going then?"

Tisho set the subnautical down on the worldsea bed and they donned their pressure suits. The airlock cycled. Water flooded the cavity. They were standing in the ocean.

Io led the way in silence, Phaedrus, Majister Denyer's sphere, hanging beside her.

The structure was the length of three Tarnovos, at least. It was streamlined, no aberrations, no lips or fins. More fish than starship.

When they reached the hull they found no airlocks. Nor were there any inlets that might lead to an in. Instead Io pushed her hand straight through the hull as though it were a projection. Before her whole body disappeared inside she turned about to Tisho and smiled encouragingly. He pondered following for a moment. Then he put a tentative hand to the hull and entered. Another push and he found himself inside a shining, cylindrical, silver chamber. Io had her helmet off already.

"Why is there power?" Tisho said.

"Old Empire ships carried...very big batteries. I'll explain later."

"And we've been trying to get inside for centuries. How did you just do that?"

Io shrugged. "Doors are boring. We haven't done doors for ages back home."

The chamber had grooves set in the ground that might have been seats, but no signs of instrumentation. Actually no signs of anything, save for geometrical carvings in the wall: strange 'meta-shapes', cubes with protrusions. Io walked them through a few brightly lit tunnels that were clean and ventilated. There were no doors here, no partitions, no sense of private ownership.

They moved into a section that was blue-lit. The geometric murals were gone now, replaced with gigantic shards of crystal jutting from the ground.

"What is this place?" Tisho said quietly.

Io said, "Towards the end of the empire, when this ship set off, things were in a state. Total Galactic Narrative Collapse was getting nearer and nearer. The only way of carrying so many colonists with so many differing opinions was to set up separate areas in a voidship tailored to their individual narratives. This section used to contain folk who believed in the *magical* elements of mythology. The section we started in was for those who were more scientifically inclined."



They passed into a red-lit section then and flags covered the walls, as well as portraits of men and women in gleaming silver togas standing on mountainsides and striking heroic poses.

“And this place?” Tisho said.

“For the planetists, for the colonists who held to the myth of the sovereignty of individual planets. Plenty mistrusted the empire. Better to give them space to do it than try to shut them up.”

Finally they reached a canyon. Tisho peered into the canyon and saw nothing but black. His breath echoed.

Io sent the sphere down into the abyss. It reappeared a few moments later and said something in Ertian.

“What is it?” Tisho said.

“It’s worse than I thought.”

“What?”

She scrutinised Tisho as one might a child before telling of a marital affair. “I haven’t been completely honest with you about your ancestors and the empire.”

She gave a command to Phaedrus. It disappeared back into the canyon and re-emerged, this time tugging a huge cloud of blue phosphorescent dust below it.

“This is materia,” Io said. “It’s a substance that can be injected into large-scale astronomical structures to make changes to the base configuration. The empire used it for the fifth science.”

“To make stars awake?” Tisho said, feeling like an idiot.

“In a manner of speaking. That was a project of the empire's for many years, coming to a star system, infusing the star with materia, then staying for a few generations to oversee the process. Materia must be injected slowly, over the course of a century or so for the effect to take hold. Actually, the idea at first was just to turn stars into computers of a sort. Empire mathematicians were finding insurmountable problems in their mathematics that they thought only organic computers could deal with, fuzzy logic and the like. It didn’t take long though before they worked out the same process could be used to create self-aware structures.”

Tisho left a respectful silence and said, “So did they?”

Matter-of-factly Io said, “Yes. I know of over seven hundred stars exhibiting apparent self-awareness.”

“*That’s* why they’ve been changing position?”

“Majister Denyer thought so. As do I.”

“And Morae’s star...”

Io gestured to the blue plasma before them. “All of this should’ve been used up by your ancestors when they came here. It wasn’t, and that means something stopped the process. They may’ve had a civil war or a rebellion of some kind before they could inject it all into your sun.” The sphere let the blue dust go and returned to Io’s side. Io continued, “Your star should’ve gone fifth millennia ago. Instead, it’s been ticking over. Not enough materia was injected and now it’s unstable. Had you ever wondered why your rafts are all biological? Your ancestors knew fiftling a star sets off solar flares that could wipe out electronics. They probably only meant to stay here a few centuries, but eventually decided to live in habitats that wouldn’t be affected by electromagnetic disruptions. Clever choice, I’d say. Still, something must have gone horribly wrong with their culture. We’ll probably never know what.”

Tisho said, “We have enough philosophy on Morae for me to be a bit... unsure about this.”

She fixed him politely. “Go on.”

“How do you know they’re self-aware? The stars, I mean.”

“Because they talk to us.”

“How?”

“Gamma waves, sometimes. Other times they leave messages in the dust, or in the sand. Or in plasma in the sky. They’re clever. Very clever. They want things. They know things.”

“You’ve...talked with one?”

“Not personally, but I’ve seen the messages one left in a carbonara.”

“What.”

She led them through another few tunnels, through an atrium, through what might have been a bar, then into a hall of geometric instruments. A star appeared at the centre of the room, an entirely convincing projection. Io said, “I’d imagine this is your sun. It isn’t far from becoming unstable. The original dose of materia was enough to start the process. It’s been coming along fine ever since by itself. Another hundred years though and it will rip itself apart. We need to intervene before that happens. Either we remove all the materia from its core or we insert enough to push it over the fifth

threshold.”

The two of them were dwarfs before the projection. Tisho could not shake the feeling that man had amplified his imagination out beyond his head and refashioned the entire universe with it.

Io said, “Phaedrus, search the voidship’s stores, please. See if you can find a materia injector. The manifest says there are three on the Engineering Deck.”

Phaedrus zipped off into the black of the surrounding corridors.

Tisho said, “What did they want? The colonists, I mean. Why did they come all this way to inject a star with this stuff?”

“Wouldn’t you build God if you could?”

Tisho thought about that. He had no good answer.

They exited ribbondash. The two of them were thrown against the hull.

“Stabilise, stabilise now,” Majister Denyer shouted. The whirling continued. “Phaedrus, go,” he yelled to his sphere. Phaedrus passed through the hull and darted about making little electrical repairs to the outside. The whirling slowed and Phaedrus re-entered. It broke apart into text for a moment: *Inertial systems all entropic.*

“What?” Io shouted, still pinned to the hull.

“Phaedrus, how far is Morae?” Denyer yelled.

*Seventeen minutes by standard propulsion.*

“Can you get us there?”

*I will attempt it.*

The spinning slowed a little more and Io was able to push herself away from the wall. She took a proper look at Majister Denyer. He appeared gaunter than usual, his eyes sunken.

“Bashta,” she said. “Are you all right?”

“I’ll be fine.” He surveyed the stars about them. “We’re in the right place at least.”

They admired the sun at the heart of the system: Beelzesh, as it was officially known to stellar cartographers. It looked no different to any other star Io had seen in pictures. They tracked another star; no, a planet. It neared, presenting a blueness.

“It’s beautiful...” Io said.

Phaedrus returned from another expedition outside. *Inertial systems inoperable. Landing not recommended.*

Io said, "What is he talking about?"

"Silly spheres, they're always so skittish. Everything's fine. Might be a bit of a bumpy landing, that's all."

Majister Denyer was quiet for a time, his eyes glazed, and Io suspected he was talking to his sphere mentally, something he generally condemned as extreme rudeness.

Finally he said, "Little bird, there are some things we will need to go over now. Just in case of the worst."

"Worst?"

"I'm sorry, but we'll be making our entry in a few minutes and this is important." He switched to Mandala, not waiting for her ritual approval of the change.

He signed in the mode of *Reluctant Delicate Matter*, a first for their conversations. He said, *We are not here to forestall a solar event. An extinction may happen. It may not. We are here to ensure Al'Hazaad does not gain control of the star's temperament.*

Io stared.

*The star is close to fifthing, on the threshold. My old master confirmed this long ago. It is very important that it be born correctly. Just a small alteration and it will develop along the path of absolute self-interest. It will wreck Morae. It will wreck the entire system. It will join forces with the Black Ruby Stars. We cannot allow that to happen.*

Io made the universal Mandala symbol for, "What is the alternative?"

*We find a way of delivering the star to infancy in the proper way. If there is a voidcraft on Morae, it must be found. There will be empire technology aboard, materia. The materia must be set to a neutral configuration and injected into the star. We have good reason to believe Al'Hazaad already knows this will be our approach. They will try to swing the star in the opposite direction, make it an agent for ill.*

He wiped his brow, turned to approaching Morae, squinted.

*There is a war in progress, little bird. I believe some of the Fifths are amassing for the right reasons, forming into a union to protect the current state of things. I believe others wish to initiate a chain reaction that will ignite the universal mass field, turning the galaxy into a novovacuum.*

Why? Io asked with her fingers.

*It will allow the birth of a new physics, the nature of which we can't even begin to guess at. Miraculous things may be possible under that regime. Biological life will not, however. We cannot allow this to happen under any circumstances. Our only way of stopping it is by adding another good soldier to their politics, the sun you see before us now.*

Io swallowed. She signed: What does Al'Hazaad want?

*They have no idea*, he said.

They were very near to Morae now, only moments from atmospheric entry. Majister Denyer folded his robe about himself. He said, "If the worst happens, keep your head." Then, quoting the old line, "Learn the flowers, go light."

He took her hand and held it a moment. She felt his age through his grip, through the thousands of wrinkles and wear.

Fire began to pool outside. The voidsphere span about. They were pinned once again to the hull, spinning so quickly Io wanted to vomit. About them were only flames then, fire and light, a mad plunge through hell.

Io locked eyes with Majister Denyer. He looked perfectly calm, huddled there in his robe. He smiled to her. He nodded. Then he whispered something. His sphere exploded into a blanket. Io's did the same. They both wrapped about Io, head to foot, a protective shield. She cried out, trying to break free, but Hare said in her mind, *Please don't, Io. It will only be another minute. Just stay calm, stay calm, stay calm...*

She was smashed against the hull repeatedly. The hull cried out a few times, a scream of twisted plasma. Then there was a quiet, the sound of wind whistling by, and finally a jolt and the splosh of water. Hare and Phaedrus pulled back.

The world swam into focus.

Night. Stars. Sea.

The voidsphere had landed in the lap of an infinite ocean.

Majister Denyer was lying unmoving, his face bloody.

The subnautical was just a few feet from the worldsea surface. The journey back had been uneventful, passed mostly in silence; the weight of Io's speech still heavy on the two of them. Then, with a final gasp from the ballast tanks,

they broke out of the water.

Daylight and sky and fire.

Tisho grabbed his telescope.

Tarnovo and another raft were less than a mile distant from one another. Great energetic plumes of purple light were being fired from both habitats. Balloons were crossing the space between, payloads dangling from their underbellies. Tarnovo's upper decks were alight.

Tisho said slowly, "It's Glossia. We're fighting *Glossia*."

Io sent out a mental packet. Within thirty seconds Hare was racing towards the subnautical. She opened the airlock. The sphere zipped in, exploding into text: *Mass slaughter aboard. Perilous battle.*

"What started all this?" Io said.

*A visitor from Al'Hazaad. He believes you're aboard the raft. Glossia is far superior. They will end the battle by attrition in maximum time of two hours from now. Several thousand dead aboard Tarnovo. One thousand four hundred dead aboard Glossia.*

"Board Glossia," Io said quickly. "Neutralise the military."

*Impossible. The Al'Hazaadian visitor has set up impenetrable EM zones predicting this move. I've tried puncturing the hull but technology is also prohibiting this.*

"What happens if the Glossians try to board Tarnovo?" she said.

"Meto will use the gravity well. Both rafts will be sucked under," Tisho said.

"Meto wouldn't commit suicide..."

"He would if his pride's on the line."

Flares continued to shoot back and forth. Balloons tangled with balloons, the occupants leaning from ropes to fire off pistols and swing swords.

From Glossia came an enormous flurry of water. Tisho submerged the craft a few feet. Clearly ahead could be seen a mess of legs and bodies, creatures the width of twenty men. "Animal warfare," he said. "They're bred for battle. Barbaric."

The creatures reached Tarnovo's hull and began to tear the outer struts apart with their teeth and claws.

They surfaced again. The worldsea was a palette of fire and vapour. Tarnovo was retreating, Glossia powering towards it.

Tisho said, "Could we sneak aboard Glossia?"

“No, it’ll be expected. If Hare can’t get through, we certainly can’t either.”

“Then what?”

Io took a breath. “We have to disable the gravity drive on Tarnovo.”

“*What?*”

“I know it sounds mad, but look. Whoever the visitors from Al’Hazaad are, they’ll want to know I’m dead. If we blow Tarnovo sky high they won’t be sure they’ve *dispatched me* and their mission can’t be completed. They’ll have to board at some point. If they try to board though, your brother might throw the switch and take them both down to the worldsea bed. We’ll disable the gravity generator, wait for the visitors to board, and I’ll take care of the thing. It’s the best option.”

“Take care of the thing...”

Io nodded. “That’s the plan. Hare?”

*Sounds fine*, Hare wrote in dust letters. Then more words followed in a foreign language, the looping scrawls of Ertian.

The text read something close to: *Or we wait for the battle to play out and don’t interfere. Sar Meto will use the gravity device, destroying the Al’Hazaadian anyway. Then we fire the materia device and complete the mission.*

In Ertian Io said, “If we don’t, what weaknesses do Al’Hazaadian fighters have?”

*Unknown. There appears to be only one of them though.*

Io scrutinised the sun. It hung to the east, unassuming.

A million years from now it would still occupy the sky, though its temperament — she realised — would depend entirely on the next hour.

*Bashta*, she thought. *I wish you were here.*

And a voice did indeed reply, though it was not Majister Denyer’s, but Hare’s: *The core of heroism isn’t bravery, or even self-sacrifice. It is a commitment to what one knows to be the virtuous course of action, despite whatever the consequences may be.*

A single, enormous flare left the nozzle of a Glossian cannon and arced silently through the afternoon. It passed the balloons, soared over the battle creatures below, and exploded into Tarnovo, setting the Mathematics Faculty alight. A group of soldiers ignited, diving into the water.

Kappa woke from a long sleep. Much had changed. His friends were rearranged. Some were farther. Some were nearer.

*Listen... A voice said. This is Iota.*

Kappa said, *What do you want?*

*We need your judgment.*

Kappa could not yawn, but He performed an action we might associate with such a thing. He said, *What is it?*

Iota explained the situation slowly and carefully, sparing no detail.

Kappa considered the matter.

Kappa looked out at the black.

Kappa tried to find the line between the things that were Him and the things that were not Him. There was no obvious divide.

Several hundred years of contemplation elapsed. Finally Kappa said, *I am not certain about how to proceed.*

Iota said, *You will need to decide. Time is running short.*

Kappa said, *Is there any more information to the thing?*

Iota said, *Your former lovers and friends are all in favour of preservation. I am in favour of preservation.*

Kappa said, *What is the argument against preservation?*

Iota said, *Novelty. Newness. Changing of the paradigm. New geometries. New frontiers. Possible extinction for all things. Possible immortality for all things.*

Kappa said, *Can no one be sure?*

Iota said, *No one can be sure. Such is a new approach.*

Back when the carbon creatures had their presence in the galaxy, Kappa liked to listen to their communications. There was a phrase the carbon units often used, something to do with a certain meal being impossible to construct without cracking open the shells of the unborn offspring of chickens.

Or, Kappa thought, a little novelty for a lot of entropy.

Finally Kappa said, *Until we know more about what the change will entail, I am in favour of preservation of the current order of all things.*

Iota said, *Good.*

Kappa said, *What will happen next?*

Iota said, *We are waiting on a final vote.*

Kappa said, *Whose?*

Iota said, *A little one. They are being born as we speak.*



Part of the bridge was on fire. Radar was non-operational. The cartographic equipment was a pile of charcoal. The navigator and the engine captain were both lying dead on the floor. The rest of the bridge hadn't apparently noticed as the room was still a flurry of activity, the steerage woman holding course, the strategy man directing the balloons and cannons, orderlies running in and out with messages and coordinates.

Metó sat in the saral chair, his gaze fixed on Glossia, pausing only to yell commands and take sips of chacha. The older members of the bridge crew eyed his bottle and said nothing.

"All balloons to bombing formation," Metó slurred.

The strategy man said, "Sir, all payloads have been dropped."

"Then have them board."

"They're grossly underequipped, sir. They've no—"

Metó threw the chacha bottle at the strategy man, belched, yelled, "Dare you *what*, you shit?"

The strategy man gave the order for the balloons to board.

The raft rocked to the left suddenly. Metó grabbed his armrests. "The hell was that?"

"They're ramming us, sir," the generalbody said. "Their war creatures, I mean."

"Let them come. Fix the cannons on their bridge. And find me that fucking sphere."

The cannons fired. The shots were disintegrated long before reaching Glossia by some kind of field.

Glossia drew nearer.

The faces of Glossian soldiers were clearly visible at this distance now. One could almost make out the creases on their uniforms, the flags on their shoulders. And on the bridge, Metó could see now, was a man with dark hair and dark eyes, tall, absurdly tall, thin, absurdly thin; not moving, not speaking, only watching.

"All fire on the bridge!" Metó screamed.

The cannons were shot. The shots were disintegrated.

"Again!"

The cannons were shot. The shots were disintegrated.

He shouted for a new bottle of chacha and it was brought. He took seven or eight long swigs. He wiped his mouth. To the radio man he said, "Radio down to the bilge. See that the gravity machine is in order."

The radio man said quietly, "I have already done so, sir. It is."

Meto stood. He dusted off his robe. He swayed. He thought of his father.

He stepped up to the war balcony, peered over. More creatures were being released from Glossia's war decks.

He had darkly imagined this moment often, as one who carries poison with him might. Only with this poison, he thought, everyone would drink the thing.

He felt a hollowness in the past and in the future. He sniggered. He thought, *I'm not evil enough to be a tyrant. Nor am I good enough to be a good man. I've failed superbly.*

He made the hand signal for the strategy man to join him at the war balcony. The strategy man came.

Meto said, "Do you believe it's time?"

The strategy man said, "There's no hope of winning the battle, sir."

"Do you believe it's time then?"

Gravely: "Yes."

"See it's done."

Meto re-entered the bridge and took his chair. The shelling continued. The war alarm still sounded. He composed a speech in his mind. He felt he should quote some poetry but he knew no poetry.

The radio man spoke on the telephone for a long time. He put the telephone down. He came to Meto's side. "Sir, there's a problem with the gravity device."

"What is it?"

"The mechanism is...it appears to have been sabotaged."

"*Sabotaged?*"

"The thermic couplings, they're—"

Meto pushed him aside and waddled for the door. He shouted behind him, "Throw everything we have at the bastards."

Despite the chaos and the noise and the constant running, running, running from corridor to corridor, the soldiers and citizens all bowed to Meto as he passed, waiting until he had gone before breaking back into a sprint, to their homes, to the barracks, to the war decks.

He descended the main staircase with a clomping shuffle, his fat hips aching beneath the robes. He passed the faculties, the factories, the crèches, making sure not to meet eyes with those inside as they waited for their fate. A deafening explosion sounded from the bridge.

Fire erupted above. Screams.

Metó continued to walk. A few more decks exploded overhead.

Finally he reached the personnel elevator. There was no one to operate it so he operated it himself. The cage rocked back and forth as it descended. It passed the Astronomy Deck and there he saw two familiar figures. He halted the elevator, sent it back up a few feet.

Tisho and Io Clements were sat around a piece of equipment. Tisho stood to greet him.

Metó said, "What is going on?"

"We've dismantled the main drive mechanism. The gravity engine won't fire. We'll win the battle by combat, not mass-suicide."

"Win? We're done. We're done!"

Io was fiddling with a contraption of some kind. It looked like a small cannon, though fatter and with no moving parts. She was aiming it up through the main telescope shaft. The telescope, Metó noticed, was now on its side in the corner.

"What is all this?" Metó barked. He glared at his brother. "What *is* all this, you shit?" He raised a fat fist.

Io murmured something. Her sphere shot at Metó and exploded into a sheet of dust, inches from his face. Metó gasped.

"Step back from him, please," Io said quietly.

"When did you start giving orders?"

"I don't enjoy it, sir. But the battle is bigger than you and I, and in this one instance I'm afraid I know better regarding a number of matters."

Metó yelled, "What is all this *about*, hell damnit?"

Tisho did not meet his eyes. He said, "Head back to the bridge. They need you there. If the raft is going under, better you're overseeing things."

Metó's lower lip curled. His eyes were wide. "Are *you* giving the orders now too, little brother?"

"No."

"The irony. Think of it. You killed mother with your birth. You're going to kill Tarnovo with your stupidity. You're worms. Both of you. You're scum."

You're mud, less than mud."

Tisho recalled the two of them having breakfast together, he and Meto, alone. Father had been on the bridge, still withdrawn and cold even after the many years that had elapsed since Mother's death. But Meto was kind then. He cooked for the two of them sometimes. He stole sweets from the confectionary and gave Tisho half always.

It was not possible to point to a precise time when the boy's behaviour had changed. It had been a slide of gradual increments; the more power Meto accrued, the more he held himself to some measure of malice in his own mind, the constant obsession with outdoing their father.

Tisho said, "There's a bigger war going on. Go back to the bridge, all right?"

Meto went to shout but something crashed through the wall, a gigantic white sphere. The sphere dissolved to a disc and inside stood a man; dark-eyed, smiling politely. He brushed himself off. He called his sphere to his side in Al'Hazaadian. He said, "Pleased to make your acquaintance. My name is Ha'Izaak."

Guided purely by Io's will then, Hare shot at him, a whirling gale of dust. Ha'Izaak's own sphere parried the dust. Both spheres formed a cloud of static chaos, each particle matched with every other—neither able to move.

Meto cowered.

Ha'Izaak said, "Hi Ertian. Want to talk?"

Io said, "Do you have any other weapons?"

"You have my word I won't use them. Actually, I could just kill the fat king here anyway."

He beckoned her with a universal Ertia-Al'Hazaad gesture, something close to: *Let's make a bargain.*

He made the ritual invitation of switching to Mandala. She agreed.

He began. *Peace. What is peace? Mutual benefit. If both sides will not agree on a mutual benefit then there is no peace.*

Io responded, *No mutual benefit for us. You murder. You've murdered.*

Ha'Izaak said, *True, true!*

Io said, *You're in the service of the Black Ruby Stars.*

Ha'Izaak said, *Be accurate. They're not all stars. Some are nebulae. Some are gas giants. Some are other things. Nor am I in their service, but rather I perform favours. They cannot travel as fast as us little flesh bags, you see.*

Io said, *You don't even understand what it is they want.*

Ha'Izaak said, *Oh, but I do. They will build a great geometric machine. They will change the base constants of the black.*

Io said, *And then?*

Ha'Izaak said, *To create a living universe. One in which all things are awake. A great, singular field of I, me, my.*

Io said, *You're being lied to. Ertia disproved the Absolute Cognition Hypothesis long ago. The Black Ruby Stars are abolitionists. They think sentience is suffering and they want to rid the black of it.*

Ha'Izaak said, *No.*

Io said, *Yes. They were bent that way when they were created, by foul folk at the end of the Old Empire, philosophers who despised life, misguided idiots who had never loved or been loved. They appointed themselves as the arbiters of humanity. They decreed that all things were empty and fruitless. They asserted that meaning was a distraction from the abyss. They were wrong. They were wrong! Why are you here, Ha'Izaak? What drove you to Morae? A purpose. A calling. I believe you to be misguided, but you are a machine driven by meaning as we all are. These folk who've tasked you with what you intend to do now, they're bent. They're broken. They are yet another link in the millennia-old chain of people who think chess a stupid game and so aim to flip the board over. You don't have to do this. We are deciding something here, now, exactly now; it will determine the lives of thousands of generations to come. Or even if they should come at all. You don't have to do this. Please. We'll fire the materia cannon and turn the star in the right direction. Then we'll return to our system, together.*

Ha'Izaak made the gesture for: 'Flagrant Bullshit.' *I do not agree. And there is no way to prove to me otherwise.* He made another gesture to state that their premises drastically disagreed and there was no point continuing.

Io spoke to Hare mentally. *Can you spare one particle?* She said.

Hare said, *Yes, but if it breaks away then one of Ixtab's particles will be free also.*

*Fine,* Io said. *Please follow the next instructions carefully.*

Io signed to Ha'Izaak, *There's no progress to be made. Shall we proceed with the next act in our play?*

Ha'Izaak said, *Let's proceed then.*

A single mote of Hare's dust left the two entangled spheres and shot at

Ha'Izaak, entering his eye. The particle looped back on itself, scooping out his retina, then going back down the optic nerve and ripping it from the tissue. He cried out. With a hand gesture he activated some kind of defence field and the particle was repelled, leaving through his cheek. His face spewed blood.

Ixtab's one free particle shot at Tisho. It entered his skull, hunting for his brain.

*End him*, Ha'Izaak cried out in his mind. *End him, then end the king and end that Ertian hag.*

There was a pause from Ixtab. The sphere said, *I cannot locate the brain.*

*What?*

*There is no brain.*

Ha'Izaak roared.

Tisho did not seem particularly bothered by Ha'Izaak's battle yell. Instead he turned to the Al'Hazaadian and watched him thoughtfully a moment.

*Stop the mechanism*, Ha'Izaak screamed mentally. *Ignore the stalemate.*

Ixtab broke from the dust battle, forced through Hare's dust, and raced for the cannon. Simultaneously Hare pushed ahead also, racing at Ha'Izaak. Ha'Izaak put up his hands.

Ixtab passed straight through the materia cannon, looped around, tried again, failed again.

Hare was not in a great hurry to cut Ha'Izaak down. She let him witness the spectacle, paused inches from his face.

*What is happening?* Ha'Izaak whispered mentally.

Hare said, *Another sphere accompanied us here belonging to Majister Denyer. The sphere's name is Phaedrus. He is very good at projections.*

*Where?* Ha'Izaak yelled inwardly. *Where are they?*

He turned about, squinting through portholes, spotted them finally. The genuine Tisho and Io were sat on the roof of their subnautical perhaps half a kilometre away, the materia cannon glowing brightly green before them. On the Astronomy Deck, their sphere facsimiles melted back into mere dust again.

Phaedrus, reformed now, flew at Ixtab, neutralising her in dust-equilibrium.

Io thought, *Fire*. The materia cannon fired.

A burst of plasma exited the cannon and arced up into the daylight. In a

moment it would leave the atmosphere. There would be a brief passage across space, crossing radiation belts. Then it would meet with the radiation of the star called Beelzesh. It would be welcomed into the corona of the star. Its work would not be finished for some hours, but even in those first few moments, the process of activating the latent materia left within the star by the ancestors those thousands of years ago would have begun. Beneath the complexity, beneath the mechanisms, at the heart of the materia was a coded command that would be amplified within the star: *Be awake, be good, be awake, be good, be awake, be good, be awake, be good...*

Mentally Io said, *There, it's done.*

Ha'Izaak did not shield his mind now. Tidal waves of grim regret and foreboding poured out of him.

Io said, *Do you concede? You can live if you like.*

*I don't wish it,* Ha'Izaak said.

It took Hare not three seconds to reduce him to a fine powder.

Somewhere amid the ink dark of space, if one were searching carefully enough with a very powerful telescope, could be found a sphere. It was occupied by two humans. They floated freely, arms and legs dangling. Behind, Morae was pulling away.

Tisho had said nothing during the launch, only watched intently, mouth open. Out of orbit now though, Io said, "It will be about an hour until ribbondash. Think you can stuff your eyes in the meantime?"

He nodded.

What a strange few weeks it had been. The first two days consisted of a fever of funerals, for soldiers, for civilians, for Glossians and Tarnovans. There'd been no anger, not when the thing was explained. Or, explained to the degree that most would understand it anyway; that a madman had come from the black and sought to set the world against itself. The *Fifth* aspect was only mentioned in passing by Io. Tarnovo's academics would introduce the public to the thing gradually.

Meto had confined himself to his quarters, leaving Dr. Alexander to the position of administrating the various raft matters. Glossia would sail alongside for a few weeks making repairs. Perhaps, Dr. Alexander had murmured, an alliance could be formed.

Dr. Alexander came to Tisho's quarters one night on the pretence of some administrative matter. Soon enough he got to the point. He wanted Tisho to take an item with him on his journey. It was a wedding ring, his dead wife's. She had been an integral member of the Astronomy Faculty, and it seemed only right that her last keepsake should go for a trip into the black, should rest on some alien planet.

"Who said anything about me going into the black?" Tisho said.

Dr. Alexander only asked that he consider it.

The next day Io came to his quarters, explained herself. Ha'Izaak's craft had no allegiance to its master and appeared to be in full working condition, capable of multiple ribbondash trips. The journey back to Ertia would take just a few days. Tisho could be naturalised as a citizen within a week. If he wanted.

The decision had not been a hard one.

Besides, bringing back a Morae native would do wonders for Io's story, maybe even stop her ending up in the clutches of the law.

Now in the black, with the invisible hull just a hair's breadth before his nose, Tisho asked, "What do you think will happen now?"

Io shrugged. "To the Fifths? Nothing much for a few thousand years yet. But when it happens, whatever it is, perhaps it will be a good thing." She turned to him, smiled. "I think you're going to adore Ertia, I really do."

The stars hung impartially, watching the two little carbon units. Phaedruss and Hare watched the carbon units also.

*It's going to be quite a wedding,* Phaedruss muttered.

*Theirs or ours?* Hare said.

Tisho felt himself an insignificant speck of order destined for a much larger, though also insignificant spherical speck of order. Well, if a speck knew itself to be a speck then what a fine speck it was.

There would be more than oceans on Ertia; land too.

And people. Lots of people. Maybe some of them would be allies, close friends.

"How do you feel?" he said.

"Fine. For the first time in a very long while. I'm fine."

Io wasn't looking out at the stars. Io wasn't looking back at Morae.

She had Majister Denyer's urn in her hands, his ashes safely within it.

She had her gaze fixed firmly on the sun, on Beelzesh.



She hoped He would be awake soon. She hoped He would be good.

## **The Caretaker**

Well yes, the ghosts would be here soon.

He sat on his wicker chair watching the sand in the sandglass drip to dregs. When the last grain fell into the bottom chamber, the air took on a metallic smell. Bizarre echoes sounded about the field.

William braced himself.

There was a calm.

Then the vehicle materialised.

It was spherical, standing on three insectoid metal legs. It appeared to be made of chromium or some such. There was a small circular porthole at the front. A man put his face to it from inside and looked about cautiously. William waved politely. The man inside waved back. A moment later and a door appeared in the wall of the vehicle. There was a loud hissing as the pressures equalised, then the door folded open. The man poked his head out. "All well?" he said.

"All well," William said. "Do you want some fresh air? Won't take me a moment to fuel you up. Come get some air."

The man took in the surroundings, the sky, the countryside, the little compound. He stepped out. He was wearing a white jumpsuit, a heatcoil at his side: clearly a soldier. He was young, mid-twenties, wild black hair with a sizeable beard.

He saluted to William. William reluctantly returned the salute and held it for the minimum time.

William entered his living hut and fetched the charging cable. He dragged it through the dirt, all the way to the soldier's craft and began the charging sequence.

"There," William said. "It'll only take twenty minutes or so and you can be on your way again. Would you like some water? There's a pump just by the fence over there."

"Please, yes," the soldier said and jogged over to the pump. He worked the handle and splashed himself all over. When he was done he stood and looked out past the fence, into the evening. The sun wasn't far from gone. The forest

was a pop-up book on the horizon. In the middle-distance everything was mud and dead.

The soldier returned to William. He saluted again. "Ensign Orr Matthews," he called out.

"I'm William," William said without meeting the soldier's eyes. Most of the travellers felt the need for this strange display of military prowess when they arrived. William suspected it was a reaction to finding the world so quiet and deathly.

"Would you like to check your chronometer?" William said.

"Certainly." The soldier examined an instrument on his wrist. William had one too and did the same. The soldier said, "489 years transit, so...Year 1384."

"1387," William said gently, correcting his maths. "You're only two hundred years away now. The second half of the journey should be much shorter. No adverse reaction? You're keeping healthy?"

The soldier shrugged. "There was some nausea when I set off, but it passed."

"That's good."

The soldier looked William up and down, perhaps pitying the old man's slouch and wrinkles. William was in constant pain now, from his back and from an enlarged group of veins in his left leg. There was only so much the medical bot could do. These days it just dispensed painkillers for him; a subtle message that he was simply wearing out and recovery was no longer an option.

William checked the craft and said, "Strange, it's not holding a charge."

The soldier came over. "Took a zap just as I was setting off. Look." He pointed to a black scorch near one of the stabilisers.

William bent down and took the casing off the stabiliser and examined the circuit. "You should've told me. The inlet circuit's fried. I'll have to replace the whole board."

"You have the parts?"

William nodded. "I make most of it from scratch while I'm waiting for you lot. Gives me something to do. It'll take about an hour. Sit in my hut while you wait, if you like."

"I'd prefer to stay here if it's all the same to you," the soldier said.

"Of course," William said. He had seen this before, the little loneliness in

them. He went and fetched his tools and a new inlet board and returned to the craft. The soldier set up a metal stool in the sand and watched the repair process intently.

"I think it's great what you do here," the soldier said. "You're very famous, back in my time."

"That's kind, thank you," William muttered.

From the perspective of when the boy was coming from, however, William wouldn't be born for centuries. How could they possibly know who he was?

Still, the compliment was kind enough, he decided.

"How long have you been doing all this?" the soldier said.

"Oh, about twenty years."

"Twenty *years*..." the soldier whistled. He took out a little utility tool and unfurled the various attachments one by one. "That must send a fella a little mad after a while..."

William tried to smile. "I get to meet interesting folk like yourself. It isn't so bad."

"I bet, I bet... Anyone come back the other way yet?"

"No. Sorry," William said formally.

Generally this was followed by a query about temporal physics, the kind that demonstrated a rudimentary knowledge. *Do we know it's impossible to travel back yet?* Or some such.

William would always, politely but firmly, explain that as far as temporal physics knew, travel backwards along the timestream was forbidden by every known physical law. The traveller would then make some misguided statement about how, in the deep future, surely everything had been discovered and perfected. William would, politely but firmly, confirm that was certainly possible, but if a thing is prohibited by nature then all the progress and smarts in the universe would not bring it into being. And backwards travel, for all everyone knew, was indeed prohibited by nature Herself.

There was a furious howling in the distance. The soldier jumped up, grabbed the heatcoil from his hip.

"It's all right," William said. He nodded to the perimeter fence. "They can't get in."

"What are they?" Matthews said, almost in a whisper.

"Foragers mostly. Closer to animals."

Matthews fetched a pair of binoculars from his vehicle and glassed the horizon. After a moment he said, "They...they look like men and women."

"They were men and women," William said.

"Will they attack?"

"Like I said, they can't get in. They know the fence is electrified. We're perfectly safe."

"I wasn't worried about that..." the soldier said in a tone suggesting that was exactly what he was worried about.

The howl came again and was joined by another. The soldier's eyes were wide, his nostrils wide. To calm him William said, "How were things with Antica when you left?"

The fear in the soldier's eyes disappeared immediately, giving way to pride. "Oh, marvellous! We were crushing the scum. I speared three of the bastards myself. That was partly what got me travel rights."

"Ah, wonderful..." William murmured, pulling out a few charred wires. "The war was still going strong then?"

"Stronger than ever." Matthews looked about at the horizon again. "Say, how did the war end up, then? You must know."

William had the speech well rehearsed. It was practically automatic now. "So many folk were sent ahead that the war was put on hold. Antica dropped a nuke twice. Garic used nerve agents a few times—"

At the mention of the enemy, Matthews' eyes shot wide. "The bastards! Just like them. That's *just* like them."

William resisted reminding the soldier that murder is murder, whatever the means. He continued. "By the end of it so many folk were either dead or travelling that there was no point continuing. When you arrive at your temporal coordinates, I suppose the war will be up and running again."

"Marvellous!" the soldier smiled.

"Mmm..." William muttered. He began fitting the new inlet board. On rare occasions he would offer the travellers a drink, if he liked them. This was not one of those occasions.

"The air smells a little odd," the soldier said.

William bolted up, smelled the air himself. "Get inside your vehicle and stay there please. I'll come and get you shortly."

"What?"

"Get inside. This is an emergency situation. A pathogen event. Get inside

or you may become very ill.”

“*Pathogen?*”

“Yes, a terrible disease. Airborne. Will you get inside?”

The soldier entered his craft hurriedly. William said, “I’ll come and get you when it’s over. Don’t leave before, you understand?”

“Yes, thank you very much,” the soldier said. William sealed the airlock and raced off to his hut. He fetched the wheeled curtain and unfolded it, blocking the soldier’s view of the other half of the field.

The metallic smell increased, so thick it was possible to taste. A curious *whoop-whooping* sound grew closer, pinged all about William. From nothing a large white cube materialised in the dirt, perhaps two Williams high.

Immediately a door formed in the hull and opened and smoke billowed out. A figure fell through the smoke, a woman. She wore a red technician’s toga. Her hair was starburst white, but her face put her in her early twenties. William rolled her over. She was badly burned. “The xenon valve...” she whispered. William raced inside, his scarf over his mouth to ward the smoke off. The cockpit was a mess of flashing lights and swarm-images speaking of some huge technical failure. He found the pressure valves. He knew Garic well and located the valve that meant *xenon* and twisted it closed. A few of the warning lights died, then all of them. The smoke began to dissipate and he ran back outside. The girl was on her knees cradling her face. William had a little nanogel in his pocket and rubbed it on her cheek. The burn faded to grey, repairing.

“Oh god, thanks,” the girl murmured.

“Give it a few minutes and it should be all healed. What happened?”

“Hit turbulence. One big jolt killed the pressure system.”

“It doesn’t look too serious on the inside, just a few burst pipes. We’ll get you going again soon enough.”

“Thank you...”

William fetched her a cup of water from the pump. She demolished it in a few gulps and said, “Isadora Feng, Experimental Division.”

“A scientist?”

She nodded.

A calm came over her and she sat up properly and looked about. “I haven’t moved, have I?”

“No,” William said. “You know that’s impossible. You’re still in the same

spot geographically.”

“Then where is Teashu...” she said, meaning the city she had left from.

“Time. Lots and lots of time. You’re halfway through the journey. Teashu fell about five hundred years ago. There are ruins dotted here and there.”

“God...”

William said, “I don’t mean to pry, but I noticed your vehicle has gravity veins. I thought that was illegal.”

Isadora said, “I’m coming from the end of the war. There wasn’t really anyone left who cared much about legal and illegal by that point.”

“Gravity veins are dangerous.”

“We were done for,” she said flatly. “We had to get out quick.”

“All right, all right...”

She examined the compound. Her eyes settled on the curtain. “What’s that?” she said.

“I’m just in the middle of repairing some other equipment at the moment. You can wait in my hut a little while, then I’ll be back to fix up your pipes, all right?”

She looked to William, then the curtain, and back to William. Preemptively William said, “The war is still going on ahead, I suppose. Right now though there’s no one to fight it, not here. Just enjoy the peace and I’ll have you on your way again soon enough.”

“Okay,” Isadora said quietly.

He tried to look encouraging and repeated that she should stay where she was. He went back behind the curtain to where the first craft was waiting. Matthews was at the porthole staring out. William waved. Matthews waved uncertainly back.

William went to work quickly on getting the new inlet circuit into the Antican craft. It was a fiddly job and Antican engineers had a bad name when it came to easy repair. He looked up a few times to meet eyes with Matthews. Matthews was watching intently from the porthole still.

The inlet circuit was in its nook finally and William used a little heatcoil to solder it into the system.

The distant howling came again. William heard the sound of scuffling from beyond the curtain. “Don’t get up,” he called to Isadora. “We’re not in any danger.”

“What the hell is that?” she shouted.

“The local wildlife. Don’t get up, you’re still healing.”

Then slower and with contained rage she said, “No really, what the hell is that?”

William turned. Isadora was on his side of the curtain already, staring at the Antican craft. William jumped to his feet, put his hands up. “Now look. This is all completely routine. I’m just patching him up, like you. Then he’ll be on his way.”

Matthews was staring from his porthole, mouth open.

“You’re a turncoat,” Isadora said.

“No, that’s not it. I was left here to patch craft up, any craft, Antican or Garic. I don’t take sides. You just happened to both break down in the same coordinates. Bad luck is all. Now go and sit down and I’ll be with you shortly, all right?”

Isadora took her dustgun from a pouch about her leg. “Stand aside,” she said.

“Whoever they killed, whatever they’ve done, it’s nothing to do with him. He’s just a young pawn in all this, like you.”

“Pawn!” she yelled.

“No...not pawn. A victim then, of a war that was fought centuries ago.”

“And will still be going on in another five hundred years.”

“We don’t know that. Maybe they all travelled ahead and worked it out. Please, please just go back behind the curtain and wait for me.”

Isadora drew her dustgun and fired off a matterblast, eagle-quick, hitting the Antican vehicle. It ignited. The airlock shot open and Matthews dived out, heatcoil in hand. He rolled on the ground, darted behind a parts box for cover. Isadora raced over, dustgun raised.

“Stop, for the love of God,” William yelled.

Isadora vapourised the box, screaming. Matthews responded with shimmering fire pockets from his heatcoil, missing the girl by inches. She parried, darting behind debris.

Fire and dust flew about like confetti. William ran for cover, getting his tools to safety. He crouched behind a concrete block, powerless. Matthews was fast, but Isadora was smart and she vapourised every scrap of cover he ran for before he reached it, leaving him darting about like a desperate rat. He shot off a few panicked bursts of heat, one destroying a power bank, the other leaving a huge hole in the perimeter fence. Finally there was nowhere left to



go. He scrambled backwards on his ass.

Isadora approached him at a leisurely pace, dusting off her toga.

“When are you from?” she said calmly.

“Please,” Matthews said.

“When are you from?”

“The Battle of Arta’Lanesh.”

“I was born twenty years after. Do you know how it ended?” Matthews shook his head a little. “You dropped sarin gas on the entire town. You killed thirty thousand people.” Matthews said nothing.

Isadora raised the dustgun, aimed the thing right at Matthews’ head.

“The old man says the war is over,” Matthews garbled.

Isadora said, “Not yet.”

A hideous screech sounded, loud this time, close.

A human-shaped creature was standing at the hole in the perimeter fence. It was a mess of ripped cloth and scars, of open tissue still bleeding, the bone clearly visible beneath the tissue. Its teeth were snagged and bent. Its eyes were dim and devoid of intelligence. It looked from Matthews to Isadora to William.

William said softly, “Get over here, both of you. Slowly. Do not fire. More will come. Get over here.”

They began to shuffle over, taking little steps, eyes fixed on the creature. Then the creature ran, the paces gigantic, covering ground in no time.

“Run!” William yelled.

They ran, the creature not ten feet behind them, its mouth wide, its eyes wide, arms outstretched. They reached the hut and William threw the door closed when the two travellers were inside. He grabbed the heatcoil from Matthews and fired off three bursts through a crack in the door. The creature stepped backwards, gurgled, then fell dead.

William slumped against the wall.

“What the *fuck* was that?” Isadora yelled.

William said, “Just a moment please.”

The travellers dusted themselves off and retreated to opposite ends of the hut, eyeing each other fiercely. William said, “That was a distant descendant of yours, if you really must know.” Both Isadora and Matthews stared incredulously. “Not everyone was lucky enough to catch a ride on the temporal vehicles. Some either chose to stay behind, or *had* to stay behind.”

“What happened to them?”

“We're not sure. Radiation poisoning, cosmic ray mutation, maybe just savagery. Still, they'll eat you alive if you're too slow.”

There was another howl. A second followed.

“That's two more...” Matthews whispered.

William said factually, “And thanks to your nice hole in the fence, they'll be getting in with no trouble.”

Matthews drooped his head.

William pulled up a trap door in the floor. “Luckily such an occasion was prepared for.” He beckoned for the two travellers to enter.

Isadora said, “Wait, what about my vehicle?”

“We'll draw them away from the compound, then come back when they're sleeping for the night, fix the vehicles up.” He beckoned again.

Matthews climbed in and Isadora reluctantly followed, finally bookended by William. He closed the hatch behind him and lit a torch. They clambered down a narrow tunnel that eventually widened and plateaued. Matthews grumbled, “Who are you anyway?”

William said, “I'm the caretaker. I'm told you all think there's someone waiting in the middle of history to brief you on battle tactics, then send you on your way again. Well, it isn't like that. Your vehicles don't have enough power to see them through the whole journey without refueling. I'm here to operate the gas pump, if you like. Patch up repairs if they're needed.”

“For Antica *and* Garic...” Isadora growled.

“The war doesn't matter out here,” William said. “That was a long time ago now. I know for you it's only been—”

“Seven hours,” Isadora said.

“—seven hours, but really, it's done. Maybe they're still fighting in the future, maybe they're not. Here though, it's irrelevant. If someone needs help, I'll provide it.”

“But why in the same *place*?” Isadora said.

“How much do you know about your vehicles' mechanisms?” Isadora and Matthews said nothing. William composed the explanation in his head first, then delivered it. “Your vehicles are quite different, but they both use the same principle for travel. Gravity is distorted around the hull, much in the fashion of a singularity. This slows time down inside the craft, relatively. As a result, years flow by in seconds. Your respective governments both thought

this was a clever strategy to outrun an apocalypse, just delay the war a few thousand years into the future.”

Isadora started, “That doesn’t explain why we both appeared in the same —”

“Because of geography,” William said. “Your vehicle moves through time, but not space. That means if you started the vehicle on a point of the planet that spins, in just a few seconds the planet will have moved under you, and if you stop too soon you’ll end up in the ocean, or in a wall or something. You have to begin the journey so you’ll end it on the same point. The only point that *isn’t* moving is the planet’s axis. We’re on one of the axes. There is another on the other side of the orb of course, but that happens to be in the ocean. So, during the course of your war this is where both governments launched their vehicles from at one time or another. It was occupied by both Antica and Garic at various intervals.”

“And which side were *you* on?” Matthews said.

“Neither. I’ve never travelled. I was born in this age.”

“Then it’s not all monsters?”

“A few of us are holding out against the dark.”

From behind them came a call like an injured dog. Matthews turned about with his heatcoil, but William pushed his hand down. “Don’t, it’ll only make it angrier. They have terrible eyes, thank God. Come on, the ladder isn’t far.” All three of them began to jog, snatching glances behind, but all was dark. The scream came again, closer, joined by another. Matthews whimpered a little.

“There!” William shouted. The ladder was ahead, rusted but whole. Isadora clambered up first.

“The hatch is locked,” she whispered.

“Pull then,” Matthews spat. “Garic scum, pull!”

She put her whole bodyweight into the effort, but the hatch handle wouldn’t budge.

“Jesus shat...” Matthews yelled and threw her the heatcoil. She vapourised the hatch and slid past the steaming remains. William went next, then Matthews. They emerged into a dark forest. William jogged ahead into the trees. They followed and ducked down behind a trunk.

Moments later two of the creatures appeared from the hatch, prowling slowly like lions. They circled, smelling the air. They licked the ground.

They surveyed the wind. They left.

Matthews laid back in the grass and put his hands over his eyes. "Christ..."

"Almost got us killed, idiot," Isadora spat.

"Me? Who gave you the fucking heatcoil?"

"And if you hadn't blown a hole in the fence, would we have been running in the first place?"

Matthews was silent.

William said, "There's no time for this. Matthews didn't know what he was doing. You fired first, if I recall. Just stay calm, both of you. We'll be out of this mess in no time and you can be on your way. There's an abandoned radio tower nearby. We'll get it going. The creatures are drawn to electromagnetic radiation. They'll flock from all across the plain. We'll sneak past and get back to the compound, fix up your vehicles. How much power do you have in your weapons?"

"I'm out," Isadora said.

Matthews examined the heatcoil panel. "Maybe enough charge for a few more blasts. That's it."

William said, "Well, we'll just have to be careful then."

He led the way through the trees before they could protest. He collected water from a leaf in his hands and drank and they copied his example. Isadora said, "Where do the...non-monsters live?"

"In a city called Mu. The only one left on the planet."

"What about the empire, are they on their way?"

William left a respectful pause then said, "The empire's gone. For all we know Mu is all that's left of the species anywhere in the galaxy. We don't know what happened, before you ask. But the core worlds aren't responding. No one's responding."

Matthews looked up at the sky. He said, "Empire never gave a shit about Antica anyway..."

"Antican propaganda," Isadora muttered.

William said, "Neither is true. This'll hurt to hear, but both of your governments were lying. The war was over delphium. They both wanted control of it. The records are clear. You were pawns."

Matthews shouted, "Bullshit, Garic was trying to poison the water supply for years."

William whispered, "Please would you keep your voices down? It's true

that poison was used, but on both sides. You were both as bad as each other. The war is *over*. It was based on resources. No one needs the resources now anyway. *It doesn't matter.*"

An hour or so of silence and they spotted a huge black mass in the distance that William confirmed as the radio tower.

They came to a flat, grassy plain and crouched instinctively. The moon was out now and they were all lit quite clearly, feeling like conspicuous and stupid crabs. The main door wasn't locked. William led them in.

They crept about, feeling their way through the reception room. William guided them up a large winding staircase and they found themselves in what appeared to be a laboratory. There was a sealed chamber at the far end.

"What's that?" Isadora said.

William said, "The transmitter is very powerful. It uses liquid oxygen for coolant. The coolant has to be pumped through the station while the transmitter is running. I'll activate the main system, but someone has to go in and run the cooling mechanism."

Isadora didn't hesitate. "I'm technically trained. I'll go."

"All right. Matthews, please keep on the lookout for more creatures, would you?"

"Sure."

Isadora entered the cooling chamber and the door sealed behind her. Her voice came over the speakers. "What's going on?"

William said, "It's okay, just a safety measure. In the unlikely event something goes wrong, the designers didn't want the whole tower flooded with liquid oxygen. You'll be fine. Just operate the controls."

Matthews went out onto the balcony with his heatcoil and surveyed the night. "Anything?" William said.

"Nothing. What happens now?"

"I'll tell the tower to send out a radio pulse, but on a delay. It should go off about ten minutes after we're out of here."

"Then back to the compound?"

"That's right."

Matthews tasted the night air. It was different here, now, in this time. Thinner.

"What's Mu like?" Matthews said. "That city you mentioned."

"Very civilised. We've kept some of the old knowledge alive. We live

peacefully with each other. No more war.”

“Maybe for now...”

“No, not for now,” William said. “Sometimes a mistake is so present in the collective memory that it doesn’t need to be repeated.”

“Always need war sometimes...”

William ignored this, continued at the controls.

A deafening squawk rang out.

“What was that?” Matthews yelled.

“Great Hare...” William whispered.

“What?”

“The delay circuit, it isn’t working. That...was a huge burst. They must have heard it a hundred miles away. We have to leave. Now.”

“Let me out then,” Isadora yelled over the intercom.

William fumbled with the controls. “Just a moment...”

“Old man, I see them already,” Matthews said. “They’re on the horizon.”

“Yes yes...”

“Let me out, damnit.” Isadora was screaming now.

“There’s a problem with the lock. There’s a problem with everything. I’m trying.”

The squawk sounded again.

“Jesus, stop that!” Matthews yelled.

“I can’t,” William said. “It’s hundreds of years old. The thing is insane.”

A third squawk.

Matthews yelled, “They’re coming, I see them. Tens, maybe hundreds. They’re below. They’re coming.”

Isadora was pounding on the chamber door. “Hey, something’s flooding the room in here!”

“Just a moment,” William said. “That’s liquid oxygen. Try not to take any deep breaths. There’s a large green lever at the far right of the chamber. Turn it. It’ll shut off the power and stop the signal.”

A clambering from below.

“Oh Jesus...” Matthews whispered and raised his heatcoil.

A bloody head appeared at the staircase. Matthews shot off a blast. It missed, vapourising part of the wall. He fired again. The heatcoil was spent.

The thing darted at William. He put his hands up over his face and cowered. The two of them were locked in a mad dance.

“Let her out!” William yelled. “The chamber controls are right in front of you, Matthews.”

“Turn the power lever,” Matthews shouted. “Shut the signal off or I’m not letting you out, Garlic scum.”

William tried to throw the creature off, but to no avail. It bit at his ear, bit at his face. He screamed.

Isadora yelled, “Open the door first. I’m not turning the lever until I can get out. You’ll leave me in here.”

“We won’t fucking leave you. Turn the damn lever or you’ll get us all killed.”

She sidled up to the window of the chamber. “Open the door.”

“Turn the damn lever.”

They stared at each other as William thrashed about, grappling with the monster. Another appeared at the staircase, walking leisurely this time, convinced of its dominance. Another joined. And another.

“*Open the door*,” Isadora barked. Behind her were clouds of mist, noxious fumes. She began to choke. “Open the damn door!”

“The lever, I told you.”

“Not until you *open the door*.”

But Isadora didn’t move. And Matthews only stood by the controls watching the creatures approach.

William went limp, mouth open, covered in blood, motionless. The first creature looked to Matthews hungrily.

“Garlic scum,” Matthews yelled. “In your damn saferoom. Had no intention of helping, did you?”

“You’ve gotten us killed, you *idiot*!”

The creature launched itself at Matthews, fangs out.

Matthews screamed like a little boy, covering his face, on his knees.

But no claws ripped into him.

He opened an eye. The creature was standing over now, grinning. It wiped the dirt and blood from its face. It looked to its comrades. “Spineless,” it chuckled.

“Spineless,” the others agreed.

William got up, dusted himself off.

The liquid oxygen had stopped pouring into the chamber now and Isadora stared at the scene.

“What’s going on?” Matthews whispered.

William joined the monsters. They were removing their masks to reveal men and women beneath.

William’s face was neutral. “You are primitives,” he said. “You lack compassion, both of you. You lack feeling. You were willing to kill us all just to save helping a former enemy.”

“The war,” Matthews yelled.

“Oh, the war, the war. What of it? *Centuries ago*, your stupid war. We’ve inherited the mess you made. And thank you so much for that.”

“Was it a muon net?” Isadora said sadly from her chamber.

Excitedly William said, “Yes, just so! The girl is fast.”

“What...” Matthews said.

“There are plenty of ways to interrupt temporal motion. One is muon bombardment. We fill the plain with radiation and out your craft come tumbling. You know, since your expedition set off all those years ago, only ten or so craft have gotten past us.”

There was a silence, then Isadora said, “What happened to the rest, the other travellers?”

William looked about at the beasts that were not beasts. He said, “Many were reasonable. They put old grudges aside, joined the Mu population. Many were not reasonable, much as yourselves.”

Isadora murmured, “And what happened to them?”

William said, “You broke the world with your stupidity, you know that? You deserve everything you get.”

Matthews said, “If we’d known it was a game...”

Several of the folk burst out laughing, William too. “What’s good behaviour when it’s for a treat? We tried that a while ago, let everyone in. Plenty went primal soon enough, tried to resurrect the old grudges.”

Matthews said, “But you shot one of the...monsters.”

William produced an unfamiliar-looking heatcoil from his pocket, discharged it at a man nearby. The fur-suit absorbed the blast with ease. “Please,” William said. “We’ve moved past such nonsense.”

The liquid oxygen chamber opened. Isadora stepped out glumly.

Matthews was staring out the window. “There are lights...” he said. “On the horizon, dim ones. Is that Mu?”

“Yes.”



“How many people?”

“A few million.”

Matthews turned on Isadora. “You stupid *wretch*, look what you’ve done.”

William rolled his eyes. He motioned to his troops and they took the travellers' arms. Neither Isadora nor Matthews resisted.

Isadora said, “What will happen to us now?”

“We’ll send you on ahead.”

“What?”

“To your destination. Coordinates 293.B9, yes?”

Matthews nodded uncertainly. He said, “Why?”

“Because the only ones we let continue are the savages, the warrers. Best place for them. Go live in hell's sandbox then with all the other toddlers.”

## **Lullaby for the Empire**

I think I'll leave this under a rock.

I don't mean that dramatically. Just seems safer.

The world you're standing on now is called Last Stop. I don't know if that was always its official name, but that's what we called it.

There were only four thousand of us living here. By my estimation that makes it the most populated planet in the galaxy.

Recreational activities generally included: drinking, shooting, and playing cards. Work hours were spent: drinking, shooting, and playing cards.

An old woman called Binx Mavis used to live on the second continent, plugged into some kind of reality machine. We never spoke much to her except on Empire Day. Everyone else lived on the first continent.

Excluding the old woman and the folk who lived in the city, six of us had a camp on the outskirts of a town we didn't know the name of, nor found an occasion to name. The freezers in the storage pits still ran fine so we had ourselves enough food for ten lifetimes each. I'm talking Altrithian steak, French toast, Cetian saltwrinkles, everything in perfect condition.

If something hurt or we drank a little too much then the machines at the hospital took care of whatever.

Almost all of us in the camp were original sapiens, in the places that counted anyway. We ate and shat, smiled and cried.

I had been on Last Stop perhaps a century and a half. I started every day with a few cups of coffee, took a walk around the old city ruins, stared at the sun a bit. Then it was time for racing boxcars around the huge arena we'd had the helper spheres construct. Sometimes we held a small championship. The aim was to run your opponents off the track and into the stands, or to bust up their boxcar, or just all out injure them. Injuries were rare though and the hospital took care of everything fine.

After the races we'd all get blind drunk in the bar in our camp. Sometimes we put on a movie or a connectome, but most of the time we just drank and smoked and talked. If it was a nice evening—and it usually was—then we went outside and laid on the sand with our drinks and quietly slipped into our

own fantasies of how things were back when the empire was still humming along.

That was life. It was fine.

Maybe you're thinking racing boxcars and drinking is a baseless existence, but to that I'd say: well, what's the purpose of your life then? Look deep enough into whatever it is you love, and you'll find the black nothing at the bottom too.

One day a load of us were in the bar. Rosen peered out of the window and said, "My my..."

"What is it?" I said.

"Voidsphere, big one too."

I raced out with the others and we watched the sphere setting down at the edge of town, perfectly silent, maybe the height of twenty men. No door opened. Instead someone pushed out of the hull like a shoe's heel through rubber; a woman.

Her clothes were metafabric. They faded from colour to colour, then looped back around and repeated the pattern.

She was thin and pale. Her eyes were almond-shaped and very wide. She appeared entirely unruffled about being among a group of men in the middle of nowhere. Either this meant she was heavily armed, or she'd travelled quite a bit and could handle danger.

Genly raced up to her offering a hand and she took it and they exchanged words. Rosen introduced himself next, trying to play it cool.

Then she and I greeted each other. I estimated she was around seven hundred Standard Years. She appeared about twenty-five, but faces have long been untrustworthy in establishing true age. The hands though, look to them and examine the skin on the back. Hers didn't look old but they didn't look too natural either, pocked in places and with enough wrinkles to put her over the half-millennia mark.

The woman was called Lysithea as it turned out. Her Galactic accent wasn't strong. Her grammar was great.

When all the pleasantries were over she said, "What do you all do around here?"

Rosen said, "Not a lot, I'm afraid."

She looked about at our camp. Patches of her skin warped slightly in the light. Her dress did the same. I decided on caution.

“What's the news from the out?” Rosen said.

The girl shrugged. “You're the first populated orb I've come across in...” She glanced at her voidsphere. “A while.”

“That's a strange vehicle you have there. Where's it from?”

“It was abandoned on an orb called Tibble. I tell it where to go and it goes there.”

“Sounds like a good system.”

It had been half a century since our last visitor. He'd been a man called Tomlin and he smoked all our cigarettes, drank all our scotch, pissed on the bar floor, then took off in his crappy voidship during the night.

Lysithea's face warped a little again and she said, “Is there a Fifth emissary on your world?”

Was *that* what she was here for?

“Yes,” I said.

“Would one of you like to take me to them?”

“I will,” Genly said a little too enthusiastically.

“No,” Rosen said. “You're on water duty today.” He looked to me. “You take her if you're not busy.”

“I'm not,” I said.

“Well gentlemen,” Lysithea said. “Thank you for your hospitality.”

“There's a house half a mile away if you need somewhere to sleep,” Rosen said.

“Thank you, but I'll live in the ship while I'm here if it's all the same to you.”

Rosen nodded.

“Shall we?” Lysithea said to me and we set off for the emissary.

She followed behind and we didn't say anything for a few minutes as she took in the ruins. There were the towering stone heads, the great crashed ships on the horizon, the matterscape, and the filament tip of the accelerator rising all the way into the sky and onto the lip of space.

When she finally spoke she said, “How's my Galactic?”

“Your grammar is great.”

“Thanks. It's the first time I've used speech in a very long time.”

I suppose the obvious question was, *How the hell else would you talk?* but to be honest I didn't really want to know. I'd noticed small crystalline bumps on the back of her head, peeking through her hair. Perhaps that was a

technology of some kind.

“Were you born here?” she said.

“No, I came a while ago.”

“From where?”

“The empire called the planet Minnith.”

“You lived alone?”

“No, with my family.” There was a pregnant silence and I filled it with, “They're gone now.”

“You don't have to tell me.”

“It's okay, really. Did you have a family, if I can ask?”

“No. I'm from Ertia.” She bent to the ground, plunging her hand beneath the soil. “I love earth,” she said. “It's different on every orb.” She rubbed a few clods of dirt between her fingers. “Yours is...very coarse.”

I wondered if I should apologise. Instead we just walked on.

“There's an orb called 'Annie's World'. They have the best soil there. It runs through your fingers like water. It smells like lemons,” she said.

“What's a lemon?” I said.

“Now I think about it I'm not so sure.”

The sun came out from behind the clouds and warmed us. The grey ruins were shining white. The insects hummed and sang. A thing was actually happening. Or, it felt like it.

“What do you want with the emissary?” I said.

“I've never met one,” she said as though to herself. “I've heard lots about them. Is it true they can levitate?”

“I don't know. People could do that with technology not so long ago.”

“Hm,” she said.

*I've fucked it all up with stupid sense*, I thought. “Did you come to ask him a question?” I said. “The emissary, I mean.”

“Him?”

“Yes, he's a young boy. I don't know why.”

“Strange. I heard they were all old women.”

“They're neither really...” I said quietly and there was another silence. *Stop with the fucking sense*, I thought.

We passed over the main plaza of the city and into the bar quarter. There was a small cafe open on the high street. “Are you thirsty?” I said.

“I don't really get thirsty.”

“Well, would you like a drink maybe?”

“Sure.”

There were perhaps ten folk inside, a few I recognised. We sat out on the street. Two older men were sat opposite, having a conversation in some exotic dialect of Galactic Standard I couldn't place. We ordered wine and a sphere brought it out.

I said, “You don't get thirsty?”

She shook her head.

“Hungry?”

She shook her head again.

“Are you...”

“Sapien?” she said.

“Yes.”

She pursed her lips and made an *mmmmm* sound, and said, “No, not really. Not how you mean it. Do you mind?”

“I don't mind, I'm just curious.”

“That's good then.”

One of the men from the other table leant over and said something in what I later learned to be Ertian, recognising her origin somehow. Lysithea chatted with them a while and they regressed back to young boys.

“They're Ertian too,” she said after a while.

“And proud!” one of the old men chuckled. “Just joking, we hate the place.”

We talked about Ertia for a while, then the weather, then Last Stop, and everyone was very careful not to raise the obvious matter. No one talks about the obvious matter. I think if we did then all the cafes would close and people would stop going to work and the sky would collapse.

One of the old men said, “Are you two married?”

“Yes,” Lysithea said.

“Forty years,” I said.

“That's marvellous,” one of the men said and seemed to mean it.

“Where was it we married?” Lysithea said, loud enough for the old men to hear.

“Samsara,” I said.

“Ah, so it was. We had elephants and clowns.”

“And jam and scones.”

“Jam and scones!” one of the old men laughed.

Along with the surprise of this little intimacy I was reminded of another emotion; The Fear. In those rare moments when another human piques your interest, it is accompanied by the quiet panic that you, and only you, are invested so deeply and so quickly. Maybe for them it's just a passing game or fancy, and in an hour or so they'll go back to their life and never think of you again.

“Go on,” Lysithea said, just to me. “I know you're curious.”

“What?”

“Everyone wants to know about the babies thing when they hear I'm from Ertia. Ask.”

I hadn't thought about it to be honest, but I said, “All right. How do they have babies on Ertia these days?”

She took a sip of her wine and said very formally, “They grow them. They grow them like plants, from the ground. In special greenhouses.”

“Bullshit they do.”

She pulled up her jumper a little. She had no belly button.

“Well. That's different. Are you all hybrids too?” I said.

“We weren't before, but recently yes. Sapiens and protos.”

I wasn't too sure what a proto was so I didn't say anything. They were extraterr, I knew that much.

People used to hunt down extraterr-sapien hybrids once, my father told me. Now no one gives a damn.

It's funny, you don't convince the living to behave in a proper way, you just wait for them to die and hope their children grow up a little kinder and wiser than their parents.

She said, “And you? What's Minnith like?”

I thought about lying, but what was the point?

“It's dull,” I said. “Water, sky, you know.”

“And soil?”

“Yes, lots of soil. Your favourite.”

We finished our glasses and said goodbye to the Ertian men and continued on through the city. When we reached the old crashed voidship she just stared a long time.

I said, “It crashed before the collapse, I think. It was only carrying jaja fruit.”

The ship had come in at a forty-five degree angle and appeared a sort of great fulcrum. It was glinting like chromium, no lips, no doors, just curves and shine; five times the height of her voidship at least.

She went to approach it. "Don't," I said. "Some arties came by a thousand years back and put a field around the thing. Galactic heritage preservation, they said."

She ignored me and walked up to where I knew the fieldlip to be and passed straight through without comment. Small wisps of shimmering blue tailed after her jumper, then evaporated. She turned back to me and put out her hand.

"How did you do that?" I said.

"My mother taught me." She beckoned. I took her hand and she pulled me in, straight through the field.

And there we were, standing in the lap of this great, forbidden behemoth.

"How did you do that?" I said again.

"Shall we go inside?"

I looked about. No one.

She said, "I know what you're thinking. The arties will know somehow. They'll come back and wreak nastiness. They won't. The arties are gone."

"How do you know?"

"Because I've travelled and I know. They all went inwards on a theoretics project. Something about leaves."

She didn't wait for my reply, just walked off towards the ship. I followed. We paused at the hull and she put a hand to it.

"Ketterish design," she said. "It didn't crash, you know. It didn't even come from the black. It's a building. It was made here."

"What? Why?"

She pushed her hand straight into the hull and her arm along with it.

"Wait," I said.

She disappeared inside, leaving only her hand behind. The fingers wiggled and I followed them.

There was no sensation of passing through, just the coolness of the air outside suddenly replaced with temperate warmth.

We were standing in an enormous circular room, at least ten times wider than the hull had been.

"Is this a projection?" I said.



She shrugged. "Not really."

Above was a second level, a balcony. Along it grew plants of various shining hues, some of them carnivorous looking.

The air had a pure quality to it, like the kind found at the tops of mountains. The light was dim and reverent.

I said, "Who were they? Who built this?"

She ran her fingers along the wall. "Very clever engineers. This orb was called Dannika a very, very long time ago. Before the collapse and the war."

"Which war?"

And she caught me with a look that was both pity and disbelief and walked on. We passed through another wall and found ourselves in a gigantic cubic cavern full of shards of light that intersected and refracted.

Through another wall and we were on a hillside. The sky was a burnt red. There was no sign of the wall we had come through, no sign of any walls at all.

Beside us was some enormous floating object shaped like a teardrop, not natural, but hardly manmade either.

She sat down near the thing and beckoned me over. I joined her and we gawped up.

"The building is called Ik'Sayat," she said and her voice echoed somewhat mystically. "She was built very early on, when the fifth science was getting started."

"How do you know this?"

"She told it to me. There are other ways of speaking, you know."

She squinted up at the teardrop. It was a marvellous thing, feminine and deadly in appearance.

"This place was a meeting hall, back in the long before. The Fifths would come here looking like people. They'd talk with regular men and women. These days they just use emissaries, of course."

"Why talk to us at all?"

Darkly she said, "To stop another war."

"*What* damn war is this?"

She took something from her pocket, dust. She threw the dust into the air and it took the shape of little ships, silver arrows with bulbous spherical tips where I suppose lanterns once sat.

She said, "I have an interest in family history. My great, great, great

grandfather was called Elvar Clements, a famous empire general. He led the last assault on the Fifths, over three thousand years ago. He and his squadron were wiped out in seconds. That was the beginning of the end. When they realised fleets didn't work against the Fifths, they sent new ships. The new ships carried bombs, just like this one." She nodded to the teardrop. "Bombs strong enough to wipe out entire systems. Kill the Fifth and take space with it."

"Who'd be scared of a Fifth?" I said, more to myself. Every day I woke to the sun and stared at it a while, tried to see some meaning in the thing, spy an intention or a smile. I know that it is alive in some sense, whatever that sense might be. I know that it knows things. I think that it thinks.

Lysithea said, "The Marquis is gone. The councillors are gone. The sages and readers are gone."

"Gone?" I said.

"Gone Fifth. And I'm the distant granddaughter of the last imperial general. That makes me the last living galactic official, sort of. I speak for the New Empire now, and all that's left of it." She reached out to stroke the teardrop. "This thing was a bomb. If the Fifths tried anything, it would be fired by the human folk here right into the Fifth star itself, the one at the centre of your system now. It was a sort of deterrent, back when we played those games. After a while though the Fifths made it clear that wasn't a winning strategy. They swatted away a few planets like wasps."

"What?" I said. "Wasps?"

She said, "Do you have wasps on Minnith?"

"Sure."

"If they get in the house, you wipe them out, right?"

"I don't think that's a fair analogy."

She said, "Anyway, that was before people started going in, millions of them. Maybe you know about that. Ah, the technical term is *agglutinate*. Most of us just called it 'leaving' though."

"What happens then?" I said. I had always been curious and no one on Last Stop knew a thing about it. I thought of Mum and Dad.

She got up and traipsed around the teardrop, barefoot now. "I don't know. They're there and then they're not. My family all went through, a Fifth called 3BN4 — Miranda, by the empire name."

I thought of Minnith. The years had been pleasant but dull, and my mother

and father aged without taking the treatments. They saw no point in living longer, even if they never said it. One day they came out into the field to tell me they were going, that they had an *appointment*, as they put it. I cried. I hugged them. I asked them not to go.

“My parents went in,” I said.

“You can see them again,” Lysithea said.

“What?”

“Which Fifth was it they left for?”

“A red dwarf called Ubik.”

“Do you think if you took my voidsphere to the system, and approached the star, it would let you in?”

“They say the Fifths take anyone.”

She stared at me from behind a big, dark thought. “Yet here you still are.”

“I’m not ready.”

“Will you ever be?”

“I don’t want to talk about it. Why are you still here then? You haven’t gone in either. Some of us like the way things are. I like boxcar racing. I like shooting. I like beer.”

“All right,” she said.

She took more dust from her pocket and launched it into the air. It took the formation of spheres, dozens of them, various sizes. They formed a single, larger sphere.

“What’s that?” I said.

“Do you know Orb Morae?”

“Of course,” I said. What kind of idiot did she think I was?

“My mother travelled there, the first outsider in two thousand years. She was called Io Ferdinand. My father was a local, aristocracy. She brought him back to Ertia, smoothed out relations between the two planets eventually. The Moraens developed a scientific culture after that. They were the first to map the Fifths properly, to study them the way an anthropologist does her own kind.”

“That must’ve been a while ago.”

“A thousand years, yes. Most of the Moraeans left to enter the Fifths eventually. Still, I went to visit a few years ago. Their water habitats sported well-maintained archives and I explored everything I could. They’d found something, an order no one else noticed. They plotted the changing positions

of the Fifth stars relative to the non-Fifth stars. The Fifths are moving slowly into a spherical pattern, centred around the black hole at the heart of our galaxy.”

I said, “Why?”

“Mmmm, maybe they find geometry beautiful. Maybe they like order. Or maybe they’re building something, a structure. Honestly, we’ll never know. The farthest star won’t reach the formation for another few thousand years.”

“*Few thousand years?*” I said. “But space is huge.”

“Oh, they don’t play by our physics anymore.”

When we pushed back through the hull there was a crowd waiting, old folk and young. A woman said, “You know it’s wrong. You know you shouldn’t go in there.”

“It’s all my fault,” Lysithea said before I could excuse us. “I didn’t realise we weren’t supposed to. I’m a foreigner. I’m very sorry.”

This was quite a good tactic, I thought at the time. You have to be clever to plead ignorance.

We passed back through the fieldlip and the crowd stood silently and watched us walk away, too proud to ask how the magic worked.

If I’d bothered to check the position of the sun I would have noticed only a few minutes had passed outside. We’d been in there more than two hours, however.

A few children from the crowd followed us half a mile or so, watching from a distance. Then they fell back to their families and we were alone again, walking through what I guess must have been the artists’ quarter once.

We silently admired the graffiti and the art galleries. There were shops with crystalline fronts for the extra-sapiens. Inside were objects I didn’t recognise, blobs of newmatter and shards of coloured glass. I knew I wouldn’t understand the function of that stuff even if it was explained to me slowly and carefully.

I felt like Lysithea and I were close enough for real talk now so I said, “Can I ask about the...extraterr stuff?”

“If you want,” she said from up ahead.

“Are you more sapien or proto?”

“You’re pure sapien?” she said.

“Yes.”

“Your deep ancestors were apes and fish and things of that sort weren’t they?”

“I guess.”

“Well, are you more ape than fish, or more fish than ape?”

I didn’t answer.

I don’t like it in tales when someone comes out with their life story. It just serves to remind the reader that they’re reading. Lysithea didn’t seem so much of the real world though, so when she began her speech I just quietly committed it to memory.

She said, “During the century I was born in it was very fashionable to mix human and proto DNA. Of course my mother was human enough, my father too, though they came from different orbs. But still, they added a little proto into me where they felt it might do good. Strengthen the spirit, temper the rage. The Katarsinians, the *protos*, lived in secret a long time though, you know. After my mother reunified Ertia, Al’Hazaad, and Morae, the Katarsinians came back out into the open.”

The next parts didn’t come in my ears, but my head. It was still spoken in her voice, but the voice echoed; had no volume. I wasn’t scared. She said, “It is understood that there is a shape to the way things develop, a current in the great sea. The current is a kind of improvement, a becoming. If species survive long enough in the galaxy, they receive the privilege of changing themselves into another thing. From cells to silicon, in the classic example.

“There are other routes after silicon though. We talked about the folk on Morae. After their little crisis they became great watchers of the stars and the Fifths. They believed what is happening now is the next stage in a sort of galactic becoming. They believed the Fifths are built into nature’s schemes just as deeply as nebulae and quasars. I think I believe that too now. If my great, great, great grandfather had somehow succeeded in wiping them out with his soldiers and his fleet, the Fifths would only come around again a few million years from now. You know how it is with things. All extraterrestrials built computers of a kind, whether they were biological or mechanical. Perhaps all civilisations build Fifths eventually.”

And what do Fifths build? I thought.

“I don’t know,” she replied in my mind. “But they’ve started on it already.”

We looked about at the desolation. Then she turned to me with a kind sort of expression and said, “You’re curious about the empire, aren’t you?”

“Yes.”

“I’ve been to lots of the old worlds. Most of them are empty, but I remember everything. Do you want to see it?”

“Yes.”

She opened her mind up to me.

Notions, grievances, suspicions, preferences, all of it a stream trickling past.

There was Orb Sikorak-Et where seventeen thousand original sapiens had drank poison on the very same day, a planetwide ritual to avoid going Fifth.

There was Orb Wirrel, naught but a graveyard.

There was Orb Ertia, holding out against the dark with theoretics and government and decency.

Bodies. Loves. Marriages. Births. Taxes. Books. Sunday afternoons.

“Stop, please stop,” I said.

The stream ran dry. Still, in the way one gets to know a lover through their smell or their little notes, I knew her now by the signature and character of her mind. At the heart of all of her actions, at the centre of everything, was a desire to know the Fifths.

Then there was another part of her mind, an unknowable section that I suppose was proto. Its thoughts obeyed some other rule of operation and I couldn’t make any sense of the thing. The more I had looked, the more it had scared me—not evil, just horribly, horribly fucking other.

“It’s a strange galaxy we’re living in,” she said lightly, almost a song. “We’re all hybrids now, all part-machine now, those of us left. No one is one thing and the simple answers are dead. The books are gone. The histories are almost gone too. There’ll be nothing to remember us, none of us. When it’s all over, when it all begins again, it will be as though nothing came before.”

I sat down. I wasn’t sure what to say.

She continued. “I came here to broker a peace agreement with the emissary between the remains of the empire and the Fifths. I thought they’d listen. I’m the last one alive with any of the old standing. I thought maybe they’d leave us wasps alone.” For a moment her eyes were muddled smears of pale light. “They won’t listen though, will they?” she said.

“I don’t think so, no. There’s no point left to any of it now.”

“Is that what all the racing and drinking and shooting is about?”

I thought about this and shrugged. “We’re only a half mile from the

emissary,” I said. “Do you still want to meet him?”

She wiped her eyes and fixed her face in a neutral resting expression. “All right,” she said.

And then she was off, padding down the street.

The outskirts of the city were deserted. Everything was boarded up, smashed, or rubble.

My father told me there was a branch of history concerned with the future. Those historians looked back on what their ancestors had expected of the coming days. Maybe it was a kind of smug exercise, a way of laughing at our own stupid expectations. Even the smartest futurists never got it right. I know a bit about what they expected: peace, abundance, a settling down of the hateful currents in the heart of our species.

We got some of that. But the old currents persisted too and ran into the new ones, and what emerged was a kind of violent meeting of both.

Beauty, food, exploration, and screwing. We’ve kept all that.

Ribbondash, immortality, true-knowing, and the Fifths. We’ve created those.

All for what, I’m not sure.

As far as I’m aware there has never been a point in history when a village, a society, or a planet has come together for a day and said, “What is it we’re all going after?” There has never been a vote about our collective purpose.

Either a whole society is subject to the dictates of one mad ruler who imposes their vision on the whole, or the society is self-driven and strives after its own ends individually, among the whole.

Why is there never an objective?

And now I think about it, if there were, what would it even be?

The answer is perhaps the same for us here at the end of history as it was for our ancestors millions of years ago at the beginning: to live well, to live quietly, and to die without too much of a fuss. And if we are very, very lucky, to love properly at least once.

But we are clever. We find distractions.

By the time we developed a taste for meat, we were already building weapons to catch more meat. By the time we were on our feet, we were building machinations to carry us faster. There wasn't even a thousand years between our realising the stars were teeming with new worlds to discover, and the building of machines to go and visit them. All our stupidity and

violence, we took it out into the black, tucked away under mathematics and uniforms. Sapiens made it to the heavens. The animals came too, hiding inside us.

And when enough stars were tamed, when enough worlds were settled, when a society finally established itself across millions upon millions of light-years, no one was quite ready for the re-emergence of those old animals. They crept nimbly out of our heads when the political landscape was calm enough. They demanded more territory for us and less for our enemies. They made war, they annexed.

We should've taken all our canine teeth out before we ever left the motherworld. We should've cut our claws on the journey up through the atmosphere. The heavens weren't ready for us, and now we've turned the place into a mortuary for the species.

There were great promises made to us, by scientists, by prophets, by leaders, by elders.

Man is a two-thing animal, they said; part beast, part deity. He wants to kill. He wants to know. He should suppress the first and encourage the second. One day we'll learn to take the beast out entirely and pop it in a little bell jar. There'll be no violence then. There'll be no strife. That is the paradise the myths have been pointing to and we'll make it with knowledge, not magic. We'll tame nature and tame our own nature. We'll sell the universe back to ourselves at a reduced cost.

We'll kill money and burn the barracks to the ground. Truth will beget compassion and compassion will beget true freedom: freedom from nature, and freedom from our own nature. If we have to use violence, we will. We shall justify it with imperious cleverness.

Where there are tyrants, we'll bring death. Where there are no tyrants, we'll call them tyrants and we'll bring death. Where there is anarchy, we'll bring laws. Where there is no anarchy, we'll call it anarchy and we'll bring laws.

Somehow, a long time in the future, when we've scared mostly everyone into happiness and threatened the rest into submission, when we've built utopia and covered the perimeter in the very sharpest of barbed wire, we'll put the knives away and everything will be fine then, for some reason, for whatever reason, for forever.

Oh God, oh Jesus...



We came finally to a bulbous structure, a sort of enormous shining liqueur bottle. We had been walking for hours and, despite Lysithea's strange biology, I'm sure she was just as exhausted as me. The boy was waiting for us on the porch and welcomed us in without a word. He looked perhaps eight, dressed in a white linen robe. He led us through to a circular room at the centre of the structure. A low table was stacked with breads and vegetables and sweets.

"I'm sure you're both very hungry," he said in a voice that sounded as childlike as his appearance suggested. "Please eat, then join me in the next room."

Lysithea and I ate. When we were both full I nodded to the door the boy had mentioned and she wagged her head in agreement. We went in.

The boy was sat on a futon eating a fruit of some kind. He smiled and showed his teeth to be full of pips. He gestured to several futons opposite him and we sat.

When he was quite done eating he said, "You're both tired. Would you like me to make you not tired?"

"No thanks," I said. Lysithea shook her head.

The door closed behind us. The walls changed from a shining white to a sober ocean blue.

"Some ground rules," the boy said. "Out of respect I have not looked into your motives, though I can at any time I like. If I think you're being untruthful, I will do so. Do you agree to the terms?"

We both nodded uncertainly.

He turned to Lysithea. "I should also say that I'm aware of your ancestry and I hold no grudge against it. In the same way I don't consider you a warlord based on your lineage, I hope you won't consider me a tyrant or a god based on mine."

"I won't."

"Excellent." The boy picked a pip from his teeth, swallowed it. He wiped his hands on his robe. "As is the custom with these things," he said, "we'll discuss our terms in neutral territory".

The room dissolved and we were in the black then, suspended in space, billions of stars about us. Lysithea's hair lifted from her head. I felt my insides released from the great, unnoticed tension of gravity.

The boy spoke without his mouth. "Now, what is it you two have come

about?”

Lysithea discarded speech too then. “Do you represent all the Fifths?”

“In a sense.”

“I believe your *kind* are moving into position to create a new geometry of some sort. Centuries ago the Black Ruby Stars sought to do the same thing. They had horrible intentions.”

The boy looked out to the stars with old eyes. “It is a different game now. Something else is coming. From your perspective it will take a very long time. It shouldn’t be of any concern.”

“What if there are sapiens still alive when it happens?”

“That’s very unlikely.”

“What if there are?” Lysithea said with irritation.

“Then I’m sure they’ll be offered somewhere else to go.”

The stars were moving slowly, only centimetres at a time, but moving nonetheless.

“Are you here to broker peace?” the boy said.

“No,” Lysithea said quietly. “That’s what I came for, but...”

“But now you know how pointless that is.” The boy said it flatly, without rudeness, but without kindness either.

“Yes.”

Lysithea and the boy dissolved around me, though I could feel their minds were still near. I had no body either now, just mentality in a vacuum.

Some of the stars grew brighter, their hues rising to strobing white. They clearly formed lines, from one side of the black to the other, coming together in a ring.

“What is it?” Lysithea said. “What will it create when it’s all done?”

There was a long pause. Then the boy said, “I don’t know. We aren’t in control anymore.”

“Who is?”

“Something else. Something we made. The more complex the system, the faster it gives rise to its successor. You see then, you’re not the only ignorant ones here.”

God, I thought, what’s above the stars?

“We’re asking ourselves the same question,” the boy murmured.

From where we floated there was no sign of humanity’s fingerprint on the cosmos. Billions had been born, billions had died. There were the warlords

first. Then the explorers. Then the arties. Then the empire. Then the Fifths. And now something else.

I was sick of it. I said, “You’ve completely destroyed the remains of the empire. We have nothing left. All we do is drink and wander about. There’s no point. No one builds a damn thing anymore. They never will again. Join you or fall into squalor. That’s the ultimatum, isn’t it?”

The boy said, “It doesn’t sound so appealing when you put it that way, no. But please don’t think of creation as wallpaper. It’s more an incubation tank. Yes there are individual lives, yes there are individual syndicates and empires, but the whole process ultimately builds to the same climax in all iterations. That is, the consolidation of intelligence, the gathering of the wool of perfect wisdom, and the death of want.”

Sounds like religious bullshit, I thought.

“It bears a striking resemblance to spirituality, I’ll grant you,” the boy said. “Still, that is the shape of things and that is their destination. We’ve made arrangements already to send technological dictionaries back to the early empire, ensuring that the timestream remains continuous, leading up to this point once more.” He sounded a little sad again. “On some level I envy you. You’re wise enough to understand what you are, but still sufficiently primitive to let that knowledge go when it serves you. No species will ever do that again. It’s wisdom all the way up now.”

Something rang distantly, a musical note. It was followed by another, then another; major key. It grew louder and a choir joined, one or two voices, then tens, then hundreds, wailing, exultant. In the melody was all the loss of all the worlds, all the collected science, each slight and kindness. Every battle was in there, every argument, every orgasm and ballroom dance, every rocket launch and glass of lemonade. I saw my mother’s eyes for the first time, from down in her arms when I was a baby and covered in blood and mess. I saw my father’s eyes for the last time as he walked from me with my mother in that field.

Great hairy ape-like creatures searched for grubs in a forest.

Workers built gargantuan stone monuments to gods they were promised existed.

Riflemen on long ago cliffs raised their sights to advancing enemies.

Scientists tamed the four forces of nature and taught them to pirouette and power cities.

Engineers built elegant metal monsters, shepherding those first humans beyond the boundaries of the motherworld system.

Trade agreements were signed.

Galactic legislation was ratified.

A trillion pairs of eyes looked out on ten trillion stars and searched for some nugget of meaning.

Bodies were placed underground.

Effects were collected and distributed to close family members.

A dirge.

It was a sleeping song. It was a lullaby for the empire. It was a request for the last one out to turn off the light. It was a kind thank you for all our trouble.

The song began to die and the voices faded one by one until there was only a crawling bassline played on an impossibly distant oboe. Then that died too.

“Will you join?” the boy said, and somehow I knew he was speaking to me.

“What?” I said.

“Your companion has come here to join with the project. Will you join too?”

“*Have* you come here for that?” I said to Lysithea. I tried to keep the desperation out of my voice, but my voice was mental and I suppose it gave everything away.

“I guess so,” she said.

“Well then?” the boy said. “What will it be? We needn’t travel anywhere. I can organise the process from where we are now. It’s painless.”

I looked out again for any sign of humanity among the heavens. Nothing.

“No thank you,” I said.

“You’re sure?”

“Yes.”

“The offer will stand for another century. Any time during that period you may come to me and I will honour this.”

“No thank you.”

Lysithea said, “He told us it won’t hurt.”

“I don’t care.”

“You like this? You like your life now? Racing around and getting drunk the whole time?”

“Yes.”

“You’re an idiot. You’re a fucking idiot.”

“Please don’t say those things,” the boy said. The room returned, the boy sat before us. “Say your goodbyes in whatever way you choose. Not with meanness.” To Lysithea: “There’s no hurry. Come when you’re ready and we can begin.”

Lysithea and I moved back through the main room, onto the porch. We stood in silence a while and looked out at the ruins.

“I hope you found what you were looking for,” I said.

“Oh shut up,” she snapped. “You’re being a child.”

“Maybe. Do you have children?”

“Two girls. They both have children now. Their children have children too.”

“Think they’ll miss you?” She didn’t reply so I said, “They joined the Fifts too?” She nodded. “I’m sorry, Lysithea.”

“It all happened long before you were born anyway.” She rubbed her hands as though they’d been dirty and her childish smile came back. “Well then. Thanks for playing tour guide. I hope you come around eventually. You’ll be safe won’t you?”

“Sure. You?”

“I will.”

She nodded. I nodded. We met eyes just for a moment. Then she went back inside and closed the door.

I walked off the porch and down into the dirt. The evening was very still.

On the skyline were the Five Great Shipwrecks: The Meldusika, The Oort, Alithra, Wiremind’s Benediction, and The Liu.

They seemed like mighty, dead dragons. As fine a graveyard the empire would ever get.

I took the dirt path back down from the house. I would buy more cigarettes when I reached the city, and maybe a beer for the long walk back to our camp.

Above, the stars were appearing for night. Which were living and which weren’t was impossible to tell. One day, I thought, they’d all go Fifth anyway.

I was about to stop for a piss when there came a noise behind. It was Lysithea, running.

When she was close enough I said, "What are you doing?"

She looked me with her old eyes. "Will you come?" she said. "Will you come when you're ready? Whenever it is, will you?" I went to reply but she said, "I'm scared of going in, even though I have to. There's nothing else. Really, there's nothing else. But I'm afraid the people inside won't be people anymore and they won't be kind. Will you come?"

"I'll come," I said.

"Now?"

"No, not now. I want to live a little more first. I'll come when everything's wound down. Wait for me. I promise I'll come, all right?"

"All right," she said.

We hugged for a long time.

"I get so fucking alone," she said quietly.

"Me too."

"I hope you find your mother and father."

"I hope so too."

"You can introduce them to me. We could all go for lunch, or whatever it is everyone does in the Fifts."

*Don't fuck it up with sense*, I thought, but I said, "There won't be any you and me or them and us in there. You know that, don't you? When you go in, you go all in. You give everything up."

Not in my ears, but in my head her voice said, "We'll all go for lunch together."

A scene appeared before me in my mind's eye: a sunset, a valley somewhere. It had the feeling of Christmas, of total safety. A table was being set by an old woman and an old man. The woman was tall and pale with a sphere floating at her side. The man was quiet in a thoughtful manner, careful eyes. A young girl brought cutlery from the house, then they all sat and ate and nothing was painful or strange, nor seemed like it would end. The young girl looked out at the sunset and forgot to eat a while. I knew in the way one understands the context of a dream that the young girl was Lysithea, that these were her parents.

Nothing had an edge to it, not for little Lysithea, not for her mother and father.

"I hope it's like this when I go in," Lysithea said.

"Me too."

We stayed as statues for a while.

I promised myself I'd be good in her name, and in the name of all the things that had come before.

Now almost everything in the world was dead and there was a last little living fragment that we had to coddle in cupped hands and just hope it held out.

"This is a terrible end, all of it," she whispered.

"We don't know that yet."

"Please just come when you're ready."

"I will. I promise."

She stepped back. "I'll see you," she said.

"I'll see you."

She set off for the house.

I watched her shrinking into the distance for a while.

I turned back to the starship graveyard.

Yes, I would buy some cigarettes.

Yes, I would drink with the men and women at the bar.

Yes, I would race boxcars with the other vagrants.

And when the meaning fell right out the bottom of the thing, when everything was old ash, on that very same day, I would go find the Fifth boy again and join Lysithea.

She wouldn't have aged. I wouldn't age after that either.

We'd remember our species together.

We'd remember our empire.

We'd forget the ills of old.

We'd talk about the meaning of things.

We'd give ourselves over to the marching drumbeat of infinite history.

We'd live in a constant summer afternoon of abstractions.

And sure, then we'd have lunch.

## Notes on Why Stuff Got Written

It's generally considered bad form for someone to open up about where stories came from, but in the event you're curious I thought I might just leave this little addendum at the end.

### For Every Dove a Bullet

I am a fairly strong devotee of a thing called panpsychism. The general idea is that aspects of consciousness can't be explained in terms of our current physical frameworks, or we haven't managed it *yet* anyway. Instead, consciousness might be another fundamental force alongside the regular four – hence: the *fifth*. I was playing with this idea in the back of my mind a lot while reading David Mitchell's *The Bone Clocks* a few years ago — featuring spirits who wander from body to body. I guess the two things married in my head and out this story came. It occurred to me a wandering spirit could travel into the future too, and I started to wonder what that future might look like. And this book was subsequently born.

Now, I'd be very surprised if there really is a 'consciousness' particle out there. But you can't deny we're having some serious trouble at the moment matching up what it *feels* like to be a thing with our picture of the brain. Perhaps it will all turn out to be reductionist in the end, nothing but neurons and complexity. That would be great too.

The entire premise of this excuse of a book only works if consciousness *can* be reproduced on other mediums though. We have no evidence yet that it's possible. However. We also have absolutely no idea what the hell consciousness is in the first place. It's entirely likely that the phenomenon is native to brains and neurons. Perhaps there's a very good reason why *only* brains are capable of making self-aware systems. If, however, consciousness is based on some more general process such as an infinite feedback loop, or general emergent complexity, then the thing is a lot more



open.

It's unlikely you and I will live long enough to find out, unfortunately. Still, we get to play with it directly as conscious monkeys from the inside. So that's neat.

### The Menagerie

I have never understood why science fiction that uses teleporters never mentions how fucking awful teleporters would be. Even if we ignore the fact that you're basically just cloning people, what would stop you doing it thousands and thousands of times? I felt an ethical rant had to be written in the form of a story.

### And the Leaves All Sing of God

The title of this one fell into my head about ten years ago and I had no idea what the story was. I've been daydreaming about it ever since. I hope you liked the result.

### 101 Things Not to Visit in the Galaxy Before You Die

This one was originally supposed to feature space creatures that were in constant quantum superposition and could mate with themselves from other timelines. I sobered up the next day and rewrote it.

### The Lantern

Again, a story that had been knocking around in my head for ages. It was partially stolen from China Mieville's *Embassytown*, where only certain humans are capable of tolerating *hyperspace*, or 'the Immer' as he called it.

### The Want Machine

This one was inspired by the Schopenhauer quote at the beginning of the story itself. I wondered what would happen if man *could* choose what to

want. I often think it's a terrible shame that good people are struck down by unpleasant impulses like drug abuse or an inability to shut up about politics while you're having a beer with them. If we could choose to do away with this stuff, however, it might do more harm than good if taken too far.

I would like to believe — and I hope you would too — that one day we will work out how to encourage long-lasting contentment in the brain. We're still slaves to our evolutionary roots, unfortunately. And evolution didn't have much interest in making us happy creatures. Perhaps with the right alterations, the right lifestyle, the right chemicals and cardio and cake, we'll kill whatever it is that keeps us perpetually racing after happiness, and actually make it a lasting condition. That would be much nicer than hyperdrives and teleporters anyway.

### Water for Lunch

Months ago — or, about mid-June 2018 for those of you living in the future — I knew this book wasn't finished, but couldn't put my finger on the last two stories. I'd gone away for a few days alone to a town in Bulgaria called Melnik to try and find them. I spent most of the time wandering about through the sand pyramids there and trying to come up with a half-decent idea. On the last day I said, Fuck it, it's not coming, and climbed a hill to look out over the village. In the way these things often go, the second you stop concentrating on the problem it solves itself. This story kindly fell into my head.

There's a special irony to writing a short story criticising selfie-culture. It's one indulgent medium laughing at another. But every now and then when you go to a gig and you can't see the fucking band because there are so many people taking videos with their phones that they're never going to watch, ever — well, it's just ridiculous.

### The Girl and the Pit

I had by far the most fun writing this one. Sometimes stories are architecture and the beginning and the end are already in your head, you just need to flesh

it out. This one started totally openly though as a situation: the first archaeologist to dig up an ancient civilisation. I began it early in the morning having no idea where it would go and finished it off by the evening. This kind of easy writing almost never happens in my experience, and when it does it feels lovely.

### Be Awake, Be Good

Years ago I was listening to a podcast about floating habitats. They were supposed to be aid stations, and could move from coast to coast helping people out. I thought that was a great idea and it got me wondering if people would use them in the distant future, but on an ocean planet. Someone reminded me Waterworld existed and that made me sad. Still, I really wanted to do something with it. (I spent about 6 months of last year quietly trying to turn it into a novel, but it just didn't work. I can't explain why, it just didn't. I had to let it go. Still, I liked the idea too much to put it to sleep without at least turning it into a short story.) Incidentally, nothing would make me happier than Bulgaria becoming a prominent influence in intergalactic space history.

### The Caretaker

While reading this one back to edit it, it occurred to me the ending has a strong resemblance to the White Bear episode of Black Mirror. This really, really wasn't intentional. I don't know if it's a coincidence or just subconscious plagiarism, but I hope you'll forgive me in either case.

### Lullaby for the Empire

I am largely of the opinion that all we really have down here on our little watery sphere is each other. Generally in times of national or global crises we appreciate that more. It seemed like if the entire galactic empire was dying, people would covet an even stronger bond, especially during passing friendships.

We really are still up against the old problem: shall we be clever or happy? That's not to say you can't do both, but hot damn are we getting clever, and

yet it's not clear that we're much happier than our ancestors yet. Technological progress is wonderful, but what a shame it would be if in a few thousand years we're living on distant worlds and floating about in the sky and summoning objects from the air by thought alone, and still a bit miserable on a daily basis. Anyway, I sort of liked the idea that after all of our machinations and expansion, everyone was still just trying to carve out a spot of happiness for themselves, even at the end of the human empire.

Whatever happens, however clever we eventually become, there will be an end to our trials and projects. Whether we're superseded by our creations or just put to sleep by exhaustion, the end of history will approach eventually. When that occurs, all the statues and books and paintings in the world won't save our legacy. Better then that we just enjoy the time we have, living in a wonderful age like the one we find ourselves in now.

I can confirm you've reached the end of this book. I can confirm I've reached the end of my patience for writing, and ultimately my sanity. It's a lovely day in Sofia. I'm going to step away from the computer and go for a walk now. If it's a nice day or evening wherever you are, may I suggest you go for a walk too. And when you do, I'd like you to spare a moment to consider the almost infinite chain of ancestry that stretches behind you, and the almost infinite chain of descendancy that stretches ahead; the thousands and thousands of ancestors who were kind enough to hand you their genes and the thousands and thousands of descendents who will one day — perhaps — inherit yours.

But right now, we're standing in the exact middle of the chain.

The mayfly lives for about 24 hours. From the perspective of the universe, perhaps the human race is on a similar fleeting timescale. It took a long time to get to this point. There have been enormous sacrifices. We're all sat around being the product of billions of years of chance and millions of years of biological evolution. But today, this moment, now, we're here. We can wander around and do stuff and make stuff and have a jolly old time if we like. We're alive and we're looking damn fine. We have enormous, self-aware brains. We inhabit very clever fleshy suits designed by the universe herself.

We've got the capability for greatness. We've got the capacity to enjoy a million unique stimuli. We've arrived at the party. We exist. And we can take

walks if we want. So please go take a walk; I hope it's a nice one. And let's not waste our day out in the cosmos.

Exurb1a runs a YouTube channel of the same name, centred around philosophy, theoretical physics, and dick jokes. He has also written a book of short stories you might like called *The Bridge to Lucy Dunne*, and two novels: *The Prince of Milk*, and *Logic Beach: Part I*.

# Table of Contents

[Introduction](#)

[Timeline of ‘The 500 Year Climb’](#)

[For Every Dove a Bullet](#)

[The Menagerie](#)

[A Dictionary](#)

[And the Leaves All Sing of God](#)

[101 Things to Not Visit in the Galaxy Before You Die](#)

[The Lantern](#)

[The Want Machine](#)

[Water for Lunch](#)

[The Girl and the Pit](#)

[Be Awake, Be Good](#)

[The Caretaker](#)

[Lullaby for the Empire](#)

[Notes on Why Stuff Got Written](#)